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THE CONNECTED CLASSROOM: JUGGLING TECHNOLOGY, DISTRACTIONS, AND EXPECTATIONS IN HIGH SCHOOL

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Dedication Page

For my parents. Thank you for teaching me how to put a fountain in a lake.

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ABSTRACT

Technology devices are increasingly being added by schools as academic resources for students and teachers. These devices are often added with an eye to increasing access and leveling the playing field in terms of digital access. This access is considered by schools to be a competitive advantage, often impacting school rankings and school report card scores. Social scientists, studying the influence of device-for-all policies, often concentrate on quantitative measures, such as student math performance or standardized test scores. This misses the lived experience in the classroom. As I show in this dissertation, computers are complicated devices, capable of expanding a student's reach while also adding new obstacles to their day. Drawing on in-depth interviews and 1,400 hours of participant observation, I argue that the everyday experience of using technology within the classroom has the potential – not guarantee – to be good for student performance, but not good for students' emotional well-being. With an internet connection and high-powered devices, students have more access to information than ever before. And while these devices are powerful teaching tools, some teachers relied on them as replacements for their lesson plans. When students are expected to navigate lessons independently, varying skills and abilities can add additional burdens to their school day. The constant connectivity via digital communication also means that students and teachers are accountable, to a greater degree, to their network (such as parents, bosses, and friends) during the school day. This also comes with increased opportunities for surveillance through social media and digital paper trails captured by students and spread throughout their networks. Paying attention to the everyday impact of connected technology in classrooms, in addition to the impact it has on quantifiable indicators of performance, reveals points of struggle that become difficult for students to escape, and which must be considered as schools evaluate the role of technology within their institutions

INTRODUCTION

The first time I visited West City High School, located in a suburb of Chicago, I was overwhelmed at the physical size of the school. Compared to the small, rural school I attended as a teenager, WCHS felt more like a small college than a high school. Several parking lots surrounded the school, differentiating where teachers, staff, and students should park. As a visitor, I was instructed to park in the visitor lot and enter through Door 1 (the only outside door, out of 33, that was kept unlocked during the school day). My purpose this day was to meet the principal, Mr. Jackson, a white man in his early 40s, and get a tour of the school. As we walked around the high school, I was struck by how self-possessed the students appeared to be. Students peered into laptop screens together, walked urgently down hallways, and made eye-contact with, and said hello to, Principal Jackson as we passed.

The school had a confusing layout, which became a running joke during my time at WCHS. Built in the 1970s, WCHS had gone through several add-ons and face-lifts, giving it multiple wings and points of disconnection. Most notably, parts of the third floor were only accessible by walking down to the second floor and back up a different staircase. Signs at each stairwell entrance noted what floors you could exit on. As I got to know the school and its students, I learned which stairwells were crowded and should be avoided, which were easiest to goof off in during class time, and which were likely to house a canoodling couple. Whenever Principal Jackson invited me to a meeting, he would almost always send me an email ahead of time with a school map attached. No matter how much time I spent at the high school, I still found myself lost if I was going somewhere for the first time.

West City High School serves approximately 2,600 students, with each graduating class having around 650 students. During my first year of fieldwork in the fall of 2017, WCHS

provided laptops for the entire student body. The year prior, the school had introduced a multi-year plan to meet their goal for 1:1 technology, or a laptop for every student in the school. As part of a pilot program, about 30% of first year students had received Chromebooks the year prior in 2016-2017. Working with a small group of teachers selected for this trial year, students were introduced to the Google Suite of classroom software a year in advance of the full roll-out. Students who received a Chromebook during the pilot year were able to use it at their, and their teachers', discretion within classes that were not part of the pilot. Students generally had experience using resources online for classes before the pilot program either at home, in the school library, or via a laptop cart that teachers could rent for day-of use.

Despite many students appearing comfortable to me with their Chromebook and the Google Suite of products, no schoolwide assessment was conducted on student computer skills and no computer classes were required for students. I asked several teachers what the course of action would be if they noticed a student was having difficulty with technology. None of them had a firm answer. Many had thoughts about how they would handle the issue, but there was not an official plan in place for how to support a student who was struggling with technology. In other words, if a student was incapable of touch-typing, the school would not intervene with remedial typing instruction. And, while Generation Z may have grown up on the internet, the students I got to know were often not skilled at the kind of long duration typing required in essay writing and note-taking – failing back on the hunting and pecking approach. I asked every student I interviewed if they were able to touch type. While many said they could, several mentioned they cobbled together their own method of typing.

The variability in student experience and preparation around something foundational like typing contributed to disparities in their experiences and outcomes in the classroom. When essay

tests were taken on the Chromebooks, for instance, students who could type faster and more accurately had an advantage over their peers who did not share those skills. During the set up for one online essay exam that I observed, students spent several minutes asking their teacher if they had to capitalize letters and spell out words fully, to which their teacher said yes. Students tried to convince the teacher to give them a pass on this. Rather than looking for ways around grammatical rules, it was clear to me that these questions related to differences in students' comfort level with touch typing. For some students it was necessary to pause at each capitalization and deliberately press the shift key, or in some cases, the caps lock key because this form of typing had been habituated. Variation in skills such as typing can put some students at an academic disadvantage in a wired classroom.

This experience watching students slowly pause to capitalize words while typing an essay exam provides a good example of how students at West City High School adapted to technology. Just as they adapted to the confusing and convoluted staircases around the school, they also adapted to technology within the classroom. Generally, they were comfortable using technology and developed different strategies for when they hit roadblocks, like asking for help from friends and teachers or utilizing Google. Yet, their workarounds were often inefficient, slow, and cumbersome, which I will discuss in Chapter 1. Just as a new swimming pool didn't turn every West City student into a swimmer, computers were not autonomous agents capable of making the students smarter, savvier, or better students. Computers could connect students with each other and their teachers, make their course material easier to carry around, give them easy access to research – but using these tools effectively required instruction and practice. Further, computers could be a distraction in the classroom, providing tools to easily cheat, slack off, or engage in social interactions during class time.

As I show in this dissertation, computers are complicated devices, capable of expanding a student's reach while also adding new obstacles to their day. Students and teachers spoke to me about their positive and negative experiences with the addition of technology into West City High School. The students I spent time with were easily able to contact, and be contacted by, their parents or peers at any time of day. Students spoke to me about the ease with which they were able to access exam notes from their smartphones or turn in assignments from the comfort of their bedrooms if they had to miss a day at school. But this easy accessibility was also extended to the negative aspects of some students' high school experiences: students told me about the difficulty of escaping online bullies and the social anxieties they felt about how information travelled online. And while nearly every student I spoke with had a strategy for how they managed their phone use and tried not to be constantly glued to their device, they were still aware that information and notifications were gathering on their devices when they were away from them. When schools add technology into their school day, it is often with the stated intention of expanding students' reach, leveling the playing field, and easing logistical burdens. And while these benefits can be true, there are also disadvantages that can accrue to students and faculty from the demands of being constantly connected. Much of the literature and statistics on technology within schools focuses on elevated math performance or increased scores on standardized tests. Yet, looking only at quantifiable outcomes of computer-connected classrooms misses the social and emotional experiences of becoming a connected student or a connected teacher. With this dissertation I explore the everyday impact of connected technology in classrooms rather than the impact it has on school performance.

High school culture and the inclusion of technology

Teenagers are influenced by, and help impact, the youth culture of high schools, which developed after World War II as part of economic growth (Jefferson 1976). This separation into a new and unique culture, led to goods and services created with teenagers in mind, which solidified their separation into their own specific cultural, and subcultural, groups (Clarke 1976, Frith 1981, Frith 1984). High school had two main roles in this group formation: it corralled teenagers together daily into a collective place and it helped reproduce class distinctions among students (Willis 1977). Youth culture, as described here, cannot be boiled down into any one culture, but by spending more time with each other within the bounds of high school, teenagers began differentiating themselves from the adults around them (Hall and Jefferson 1976). In cases where a student does not fit into, or enjoy, the high school system, their identity and culture are instead built around this lack of fit (Coleman 1961). Thus, high school became the place, and the life stage, during which teenagers began to differentiate themselves from their families and figure out who they wanted to be.

Most research on high school students notes divisions among students by socioeconomic status, gender, and race/ethnicity. Understanding these divisions among students is important for understanding how students associate and participate in high school. Regardless of whether they are called “elites” (Coleman 1961), “jocks” (Eckert 1989), or “ear’oles” (Willis 1977), students who have bought into the high school’s mission to prepare them for future careers or college tend to associate more strongly with the high school, conforming to its spoken and unspoken rules. While not always the case, these students tend to come from families with higher socioeconomic resources and parents who have office or professional jobs and who attended at least some college. Students who position themselves more in opposition to the school, on the other hand, tend to come from families with lower socioeconomic resources and parents who work in manual

labor positions with no college experience (Coleman 1961, Eckert 1989, Pyne 2019). In many cases, students from the latter group disconnect because they feel the school is failing to address their needs, rather than believing school is altogether irrelevant (Eckert 1989). High schools today, living in the shadow of these past findings, continue to impact students in similar ways. Parents, friends, and the community in which a school is located influence whether and how a teenager affiliates with their school and academics as a whole (Willis 1977). And well-resourced schools, for the most part, improve their rankings by encouraging students to take (and pass) Advanced Placement courses, participate in sports and extracurricular activities, and apply to colleges and universities (Morse and Brooks 2019).

One place where major shifts have come into today's high school is through technology. Technology has always played a part in schools – starting with pencils and papers, telephones, and computer labs. But as technology capabilities have increased, students began to bring cellphones, smartphones, tablets, and laptops with them to school. Any time technology evolves, like we have seen around the shift from megacomputers to desktop computers to laptops in just a few decades, critics of its place within the social world shortly follow. As the telephone was introduced into individual households in the 19th century, for example, telephone companies combated beliefs that telephones were frivolous and would lead to the devolution of social interaction (Fischer 1994). The ubiquitous presence of smartphones and personal technology amongst teenagers and adolescents has created an entire industry attempting to lay a claim as to whether technology is good or bad (boyd 2014, Garcia 2017, Humphreys 2018, Kamenetz 2018, Kardaras 2016, Riley 2018, Sims 2017, Turkle 2017, Twenge 2017). Those in support of teenagers' use of technology champion its ability to create a way for teenagers to "hang out" digitally when they cannot physically be together (boyd 2014) and to open up creative

opportunities for teachers to engage their students within the classroom (Garcia 2017). Those who espouse technology's negative impacts cite its addictive nature (Kardaras 2016) and its use by lazy parents looking to technology to distract their children (Riley 2018). Still, the everyday use of technology that connects users continues to grow at the time of this writing. A recent PEW study, for example, found that 95% of U.S teenagers have access to a smartphone (Anderson and Jiang 2018). And, in some schools across the U.S., the use of computers in the classroom is now mandatory through initiatives that provide laptops to all students – laptops that often are donated by major computer companies, such as Amazon or Google, hoping to build brand loyalty among new consumers (Klein 2020).

As school administrators believe technological savvy provides students with a competitive advantage, high school students are increasingly expected to participate digitally at school. Increasingly, students have access to school sanctioned laptops or tablets (Phoenix 2017). Where previously students used notebooks and textbooks for classes, 60% of high school students in the United States are now expected to use school-provided devices (often Chromebooks, iPads, or other laptops) to connect with course content (Maylahn 2019). School administrators often believe that giving computers to students who do not have a home or family computer and supplying educational software will help address gaps in student knowledge, access, and experience. Yet, these new technologies are changing how students participate in class, communicate with teachers and each other, and, in some cases, learn (Moore and Vitale 2018). And, as I show in my research, we know very little about what these changes mean for students and teachers.

Technology and education

Students are interacting with information and communication technologies (ICTs) within academic institutions at increasingly higher rates (Godsey 2015, Gray, Thomas and Lewis 2010, OECD 2015). Where once classrooms contained a lone computer (if a teacher was lucky), now individual students are provided laptops or tablets for use during the school year. Decision makers for academic institutions commonly believe that access to, and use of, technology is important for students' immediate success in the classroom, as well as future success as members of the competitive workforce. School officials believe students from lower socioeconomic backgrounds who are most likely to lack access to computers and technology – the so-called "digital divide" – will miss out on professional marketability, educational benefits, and 21st century literacies (Kyle 2000). This trend toward wired classrooms raises an important sociological question: what happens when connective technologies – once largely imagined as a distraction from students' learning – become part of the required lesson plan?

Within much of the literature on technology use in educational environments and teenagers' social lives, we see conflicting findings on the benefits and shortcomings of educational technology and the harmful impact of teenagers' use of social media. Studies have shown that the academic performance of students who use technology within the classroom is commonly below that of their peers who do not use technology (Carter, Greenberg and Walker 2017). Yet, some schools that implement one-to-one laptop distribution report that students graduate with higher GPAs and show greater course completion (Fairlie 2012). Computer assisted learning (CAL) has been found, in some cases, to improve learning outcomes via better math performance (Barrow, Markman and Rouse 2009), state achievement tests (Campuzano et al. 2009, Tatar et al. 2008), and literacy skills (Deault, Savage and Abrami 2009). On the other hand, some studies show evidence that 1:1 technology for students has made little or slightly

negative impact on students' grades and performance. Outside of measurable outcomes, such as grades and standardized tests, some studies have noted that students can struggle in socioemotional ways in wired classrooms (Chen 2019, Sales 2016), which has led some schools to advertise no technology in classrooms as a selling point for parents (Schoolov and Brigham 2019)[1]. The common thread within these studies is the disagreement about the benefits and disadvantages of technology in the classroom. What is missed is the lived experience of using, and relying on, technology in the classroom.

I draw on two years of ethnographic work and interviews with high school students and teachers, to bring focus to the lived experience of technology-accompanied curriculum. Throughout my time in the field, I set out to see what high school looked like inside the connected classroom, where students participated in class via laptops, communicated with teachers outside of class time via smartphone applications, and juggled accountability to multiple roles by being constantly accessible. My concern was less about grades and academic performance, and more about how teachers and students used technology to teach, learn, connect, goof off, and discipline. As my research shows, technology does not just give schools and students a new tool through which to facilitate lessons or social life. Computers in the classroom do not automatically turn an ineffective teacher into an effective one, or magically transform a disengaged student. What technology does provide are the tools to lean in more to the kind of teacher or student they already are. Instead, technology amplifies what already exists within the classroom, rather than transforming it. Teachers who are motivated to challenge their students will use technology to do so, whereas teachers who wish to be more hands-off in the

[1] These studies often highlight that tech leaders, such as Steve Jobs, Bill Gates, and Tim Cook, kept technology away from their own children and families, and enrolled them in tech-free schools (Weller 2017), (Weller 2018), as though those who were closest to technology had inside information as to how dangerous it might be to developing brains.

classroom will use technology to supplement teaching. Students, for their part, will not score better on math exams or the SAT simply because they carry around a laptop all day. If anything, they might just become more clever at making teachers believe they understand course content. When technology in the classroom is measured in grades and test scores, we miss the inequalities and upsets that are challenged, introduced, or reproduced.

Schools as sites of social control

To understand how wired classrooms can contribute to the persistence of long-standing inequalities in education, we need to understand school-sanctioned laptops as not just tools for learning but also tools for discipline and social control. Scholars have written extensively about discipline in schools. These scholars generally share a belief in school's secondary purpose (behind that of educating youth) as a mechanism for sorting and ranking students into future employment options. Informally, students are also disciplined through socialization. Durkheim (1973) believed the socialization requirements placed on students in school helped them to become moral citizens, capable of deference to social rules. Students, for their part, assist with dissemination and upholding social rules within the high school. As Eckert (1989:6) found, "Adults do not impose their class system and ideologies of school orientation; they provide the means by which adolescents can do it themselves". Foucault (2012) similarly believed that discipline was necessary for controlling students in ways that led to productivity within the work force. Within the school, discipline can be the formal and informal rules a school enforces (Bowles and Gintis 2011:39), the consequences of breaking those rules (Foucault 2012), and how these rules can be applied unevenly to students (Kupchik 2010).

Formal rules are presented by administrators and teachers as neutral, created with "the general student" in mind and enforced impartially (Walker et al. 1996, Willis 1981). Students who do not match this ideal, generally viewed as white, middle class, and male, are often left to struggle against these expectations and the subject of harsher disciplinary actions. In addition to formal rules, students can also be punished for breaking informal rules when they behave in ways found to be socially unacceptable by teachers (Bourdieu 1977). Schools enforce these informal rules about ideal behavior, commonly referred to as school's "hidden curriculum", to promote dominant social norms (Bowles and Gintis 2011). This curriculum holds students accountable, through rewards and punishment, to these ideal expectations for behavior in classrooms (Bourdieu 1977). These rules, not always applied evenly, are often felt the most by students who are boys, not white, differently-abled, from families with a lower socioeconomic status, or LGBTQ. And when they do find themselves the subject of punishment, teachers commonly label their behaviors as intentionally deviant (Diamond and Lewis 2016, Palmer and Greytak 2017, Skiba and Losen 2016). As technology enters academic institutions, schools must consider how additional opportunities for student discipline accompany it.

Discipline is, of course, necessary to the smooth functioning of a classroom. Teachers have to keep a course's lessons on track by finding a way to teach, collect assignments, and provide feedback to 30 or so students collected within one classroom. Especially when the students are children, teachers' expectations that they sit still and quiet for a prolonged period of time can be difficult (Leriche 1991). Rather than acknowledging innocuous differences in student behavior or differences in material conditions, these students' and their families are blamed by teachers and administration when students fail to live up to a school's expectations for their behavior (Bettie 2014, Ferguson 2001, Griffin 1985, Way 2011).

When schools add technology into the school day, the rules for how it is used, which are still rather informal in nature, and the inequalities in how they are carried out, get muddled even further. Because students have uneven acess to technology, the expectations and policies for how students use technology within academic environments are often created with those who have the most experience, skills, and access in mind (Purcell, Buchanan and Friedrich 2013). A lack of technology access at home often means that a student's parents cannot provide guidance in the same way they might be able to help solve a math problem (Horrigan 2016, Shapiro 2014). One-to-one technology programs at schools can help to even out access issues, but often ignore issues of training or experience. Thus, just because you give a student a computer, does not mean they, or their parents, know how to use it.

This research suggests a merging of technology and virtual communications within high schools means a greater likelihood of non-academic virtual distractions with which students must contend during the school day. When students break the rules of internet conduct within the school, they can be unevenly punished for their virtual behaviors just as they could for their in-person behavior. If we already know, for instance, that black students are disciplined unequally and at greater rates than their white peers (Ferguson 2001), then it should be no surprise that the addition of technology into the classroom leads to additional opportunities for the punishment of students who behave outside of expectations.

Information and communication technologies also give teenagers the ability to be virtually connected with parents, friends, and teachers regardless of whether they are at school or at home. One-to-one technology policies within schools makes it easy for high school students to have access to school work and resources no matter where they are in the world (as long as they have an internet connection). It is this pressure, to access the resources needed to perform work,

and receive and respond to messages received throughout the day, that can lead to an overload of expectations for high school students. This constant connection and accessibility through technology can heighten the stress students feel to keep performing and working, especially for those enrolled in high-performance schools (Galloway, Conner and Pope 2013).

Social media can exacerbate these sensations: where previously a teenager's home may have been a refuge from bullying, sexism, or racism experienced at school, these things can now follow them home via smartphones and social media (boyd 2014, Orenstein 2016, Sales 2016:204). Just as high school students before social media were able to experiment with subcultures and varying interests (Brake 1985, Clarke 1976, Leblanc 1999, McRobbie 1978), today's teenagers can experiment and connect through digital worlds. boyd's (2014) idea of "networked publics" gives us a tool for thinking about how teenagers' social lives might be reflected online. Networked publics are spaces that are restructured by their connection through virtual tools. They are simultaneously: (1) the space constructed through networked technologies and (2) the imagined community that emerges as a result of the intersection of people, technology, and practice (boyd 2014:8). These linked-together virtual locales provide opportunity for youth to carve out not only physical space, but also virtual space in which to be involved in activities and experimentation. Teenagers access virtual spaces largely by choice, but because they are no longer physical, and their members can access and be accessed at all times, these are additional venues through which teenagers may find it difficult to escape (Sales 2016:204). This increased expectation of access and availability of students, from their personal and academic lives, puts their multiple roles into conflict, creating an amplified overload of role and performance expectations, which I'll cover in the next section, that become difficult to escape. Because much of a teenager's activities can be seen and tracked through this constant

access and constant visibility, teenagers' susceptibility to disciplinary actions is also impacted. This accessibility and susceptibility means that teenagers are increasingly unable to live their digital lives in private. The teenagers I studied, however, found ways to consistently challenge this overlap between the physical and virtual worlds by creating their own privacy standards and practices and by using their technology to make the adults around them accountable for their offline behaviors.

The strain of hyperconnectivity

Networked technologies increased people's ability to be reached at all times, thus expanding the locality of people's networks (Mitchell 1995). For teenagers, in-person activities are supplemented with digital communication through texts, chat applications, or social media, that do not rely on geographic proximity.

By expanding our reach beyond those who are within our physical proximity, users are able to expand who is in their social networks and how far their networks reach. In this case, the idea of "local" may become expanded with the help of digital connectivity, yet it remains relatively proximate when we look at who people are communicating with and why (Fischer 1994). When we increase the reach within our current networks through internet-connected smartphones, we also increase expectations about our availability to our network when we are not within each other's company, such as through smartphones and social media (Harris 2004). Users are now available to each other at any time of day, as long as they have an internet or data connection, which often leads users to expect their network members to be constantly available.

The students I spoke with felt pressure in two ways from increased technological capabilities. They felt the pressure to *perform* as well as the pressure to *respond*. In the first

instance, referred to as technostress, individuals feel the pressure to continue performing and being connected because of the ease with which they can tune in and connect to outside responsibilities (Tarafdar et al. 2007). For an student or teacher, this could be the pressure to continue working at home in the evening because work and/or class files could be easily accessed from one's home internet connection and/or computer. This pervasiveness of connected technology can then lead to anxiety (Marcoulides 1989), stress (Brod 1984, Weil and Rosen 1999), and an adaptation of how an individual role fits into organizational wholes (Barley 1990). Where individuals are expected to respond, because of their connection via technology, this is commonly referred to as telepressure (Barber and Santuzzi 2015, Grawitch et al. 2018). While similar to technostress, telepressure notes the specific expectation to read and respond quickly to digital communications and the stress that can follow when one does not. For teenagers and adolescents this pressure can create a perpetual fear of missing out (what teenagers commonly refer to as "FoMO") on social information and activities (Przybylski et al. 2013). Both technostress and telepressure first emerged within workplace studies, which led to changes in "roles, reward systems, and authority structures" (Tarafdar et al. 2007:303), in addition to being identified as sources of stress for employees. Some workplaces have made shifts that include "flex time" or remote options, allowing employees to manage work obligations alongside personal life responsibilities (Duxbury et al. 2014). High school students, as of yet, have not seen the same kinds of massive cultural shifts to help them adapt to similar demands. By concentrating quantitative data points only, such as scores and grades, schools miss the emotional demands of adding technology to the school day.

My study

This study focuses on high school students and teachers and their experiences of acclimating to technology use within the classroom. I consider this acclimation process through the "official" technology given to students by the school (in this case, Chromebooks) as well as the "unofficial" technology provided by students (smartphones). I argue that test scores and grades are not sufficient for understanding the impact of 1:1 technology. While grades can be an indication of the impact technology has in the classroom, these can also be subjective (Jenkinson 2009) and standardized tests can be taught to, regardless if there is technology in a classroom or not. And even where rising scores may be attributed to the presence of classroom technology, this still misses the experience of the students and teachers using it. The students who experience these rising scores, and the teachers responsible for them, can be miserable and strained in the process. In my study I show how the everyday experience of using technology within the classroom may be good for student performance, but not good for students' emotional well-being.

By observing the introduction and normalization of technology in the classroom, I show that this process of inclusion is imperfect. As I show, technology makes it easier for students and teachers to amplify the kinds of behaviors they were already exhibiting, rather than offering a tool through which to course-correct undesirable behaviors. As I show, a device amplifies behaviors, commonly referred to as affordances (Gibson 2014), rather than making students more engaged or teachers more creative. The tools for both are available, but only if teachers and students opt in to using them. On the other hand, because technology affords the potential to ease burdens and create shortcuts, this same potential is also used by teachers and students to disconnect further from school responsibilities if they choose.

To conduct this research, I used two methods: ethnographic observations and in-depth interviews at a high school located in the suburbs of Chicago. Between 2017 and 2019 I observed teachers and students within classrooms, during free periods and extra-curricular events, and during faculty meetings. I shadowed students to observe the process of a full school day and participated in the annual creation of the high school yearbook to get a better understanding of the school's culture. I use a pseudonym to refer to the high school where I conducted my research, referring to it as West City High School. I selected this school because of their location and the timing with which they were becoming a 1:1 technology school. During the time of my study, the high school, and the town in which it was located, generally matched U.S. population averages in terms of race, annual income, and education. Most students I spoke with and observed were headed to a four-year college upon graduation. West City High School students' academic performance exceeds that of state averages, but does not surpass their district peers. Ethnic and racial minorities make up approximately 53% of West City students and about 22% of students are considered economically disadvantaged.

The majority of my research was done through observations. I conducted 1,400 hours of participant observation during my two years of fieldwork. Fieldwork at West City High School consisted of sitting in classrooms, shadowing students, and attending high school events. I supplemented observations with interviews with eight teachers and 21 students. I used these interviews to shed light on, and ask questions about, things I had observed. Of the students and teachers who I interviewed, 16 identified as white, 3 identified as African American or black, 3 identified as Latino, 5 identified as Asian American, and 2 identified as more than one race. Ten interviewees identified as male and 19 identified as female. The students I interviewed were generally juniors or seniors, in their second half of high school, though one was a freshman.

Teachers' ages ranged from 28 to 47. Teachers' experience was anywhere from six to 13 years, with all but two teachers having ten years of teaching experience.

Research design

I selected West City High School because of the school's implementation of laptops for all students at the start of the 2017-18 academic school year. I was interested in learning what impacts this change in policy had for students and teachers. The class and race demographics also allowed me to examine how the introduction of the laptop policy shaped classroom and educational experiences for students in ways that bolstered or challenged known social inequalities. Further, I wanted to see if gender, race, and/or class impacted students' introduction of a wired classroom into their school lives. After gaining access to the site from the school, I began attending school three days per week to observe the ways in which teachers were implementing technology into their classrooms as well as how students were reacting to it and using it on their own.

Using observations I cross-examined the information gathered in interviews to be able to consider the possible distinctions between "doing" and "saying" (Martin 2003). My observations focused on students and faculty/administration. With high school students, I saw how teenagers' interactions with technology were impacted by social spaces and/or adults who were present. I could also observe online interactions that occured when teenagers were physically together in social spaces. Faculty and staff, on the other hand, set the rules and procedures for internet activity that high school students must follow. They attempted to keep abreast of issues teenagers faced and trends happening within the population and implemented regulations to address these issues. Observing how devices were employed by teachers for use in the classroom, as well as

what mediations were made for students who may be less skilled with the devices, helped me explore how students with varying skill levels with ICTs were being considered. Similarly, observing classroom rules for personal technology devices, such as smartphones, and how these were considered alongside devices such as laptops allowed me to observe how a teenager's comfort with one device leads to assumptions about their blanket comfort with all forms of ICTs.

After a year and a half of participant observations I began recruiting students and faculty for interviews. Students were recruited through personal relationships, teacher referrals, and introductions from other students. Teachers were recruited from personal relationships. Because West City High School is a large school, Principal Jackson assisted me in making a diverse list of teachers who he believed would be able to speak to varied experiences and viewpoints. Students at WCHS did not regularly check their school-provided email, so I learned to recruit and communicate with them via school-sanctioned messaging apps such as Remind, which allowed me to message students in real-time without exchanging direct contact information. Within the high school students viewed me as a researcher who was interested in how they used technology and planned to write a book about it. Students generally assumed I was a college student who was getting a teaching degree before they met me or had a friend correct them. I believe my generally youthful appearance and the fact that I never reprimanded them when they broke rules helped them to see me as someone separate from the high school. However, because I was getting an advanced degree and was an adult who had friendly relationships with their teachers, I believe this also differentiated me as an outsider within their age group. For students who were less academically inclined at West City, this could, for some students, create a barrier between us, and for others make it easier to connect because they expected a PhD student to look and dress more professionally than I did when I was at the high school. After students got used to

my presence on the school's campus, I believe they began to view me as occupying a middle space – somewhere between student and adult (Dwyer and Buckle 2009). This space, I feel, minimized our differences and assumptions and helped students feel comfortable with me during conversations and interviews.

Chapter Outline

In this dissertation, I consider how the addition of technology, in the form of school-sanctioned Chromebooks as well as personal devices such as smartphones, into a high school impacts the school day. In Chapter 1 I begin by looking at how teachers fit technology into their teaching styles. I find that teachers generally fall into one of two camps: hands-off teachers and hands-on teachers. This teaching style describes teachers' interactions with their students. Hands-off teachers, in general, note that they are giving their students the freedom to manage their own educational lives and take responsibility for themselves. When these teachers add technology into their classrooms, most often in the form of Chromebooks for students, they use technology to supplement their teaching. This often requires students to engage with lessons on their own via online videos or worksheets, which gives their them more independence over their lessons and eases logistical burdens for teachers. Hands-on teachers, adversely, use technology to bolster their teaching – they found tools to enhance their lesson plans, which they then used to connect students to each other. Often, this addition meant that these teachers signed on for more work, as they were continually learning about and assessing tools for their classrooms.

In Chapter 2 I explore how the high school is impacted by communication technology. Both teachers and students were accessible to their larger networks because of texting and messaging capabilities through their smartphones. Family, friends, and anyone else outside the

school were now able to contact students and teachers, putting their various roles and responsibilities into greater competition. I compare the experiences of teachers and students as well as how both groups manage this constant contact during the school day, which can be both a burden and a blessing, when it comes to each group managing their outside lives and responsibilities. Similarly, I also consider how social media plays a role in this constant accessibility.

Finally, I consider how the addition of technology devices impacts high school discipline in Chapter 3. Because students are physically passive when they are tuned into their smartphones, teachers were able to use this to their advantage when attempting to keep a calm and orderly classroom. Students then receive positive reinforcement to use their devices during quiet moments, if it kept them from disrupting their peers. Similarly, because students often document their activities, they also created digital paper trails that could be used as evidence against them. This impacted teachers, too, whose misdeeds students could capture and share with their network. Thus, even when teachers attempted to manage their online profiles, or lack thereof, students would make them accountable through their own online network.

CHAPTER 1: TECHNOLOGY AS A PEDAGOGICAL CURE-ALL

The technological tools used by teachers at WCHS had a significant impact on teachers' and students' days. The more time I spent at WCHS, the more familiar I became with the tools available to teachers, how they used them in the classroom, and how students adapted to them and technology as a whole. The teachers whose classrooms I visited at West City High School commonly gave students a rundown of the day's lesson plans before class started, which would then set the tone for the class period. Sometimes this would be presented as a schedule projected on a screen or written on a whiteboard at the front of the classrooms, other times it would be verbal. When a student I was shadowing would ask a friend during passing period what they should expect from an upcoming class, I stopped having to ask what they heard that made them excited for or dread the upcoming class, and instead began sharing their reactions. Students pretty consistently shared the same feelings about various resources and how they were employed by particular teachers. Students might look forward to one teacher's in-class project day, while dreading another's. Similarly, the technology employed for a "fun" study review day could have mixed reactions, depending on who was leading the class and how the technology was used. Students dreading certain teachers or classes are nothing new. Personal preference and gossip about which teachers students believed were "easier" or "fun" have always been present. I found that often these feelings stemmed from how technology was being used to implement a lesson in the class. Being an outside observer did not make me immune to being bored or excited about an upcoming activity. A full school day at WCHS could be mundane, filled with long lectures, lots of sitting, staring into Chromebooks, and few breaks, so class periods that were full of energy, physical movement, or interactions were reprieves I, and most students, looked forward to.

At WCHS I saw how technology in the classroom, namely the students' Chromebooks, influenced teaching styles and certain lesson plans. In what follows I look at the ways teachers implemented technology, or not, into their classrooms and the ways students adjusted to, and were impacted by, the prevalence of technology. My argument here is not that its inclusion is inherently good or bad, but rather, that technology does not, on its own, make students smarter or more engaged in the classroom, nor does it make teachers better conveyors of lesson plans. Instead, technology provided the tools for teachers to be *more* of the kind of teacher they already were. Technology provided teachers with affordances (Kennewell 2001) to amplify their preferred ways of teaching. A teacher who took personal interest in her students and adapted to varying learning styles would use technology to do so, whereas a teacher who was less interested in engaging students could lean on technology to fulfill her teaching obligations for her. Within the classroom, technology could be a tool or a crutch.

In this chapter I will show how using similar, and in some cases identical, technologies in different classrooms led to a variation in classroom engagement. I challenge arguments about technology and connectivity adding immediate competitive advantages to the high school, and high school students. Teachers tended to fall on one side or the other in terms of how they approached technology use within the classroom. Some teachers, who I will call *hands-off teachers*, used technology to supplement teaching, believed technology gave students the tools to work independently, and enjoyed the ease of organization it brought to their own lives. Other teachers, who I will call *hands-on teachers*, used technology to complement their teaching, believed it connected students to each other, and enjoyed the ease of organization it brought to their own lives, even though it often made them more complicated. In the second half of this chapter I will show how students adjusted to the use of technology as a teaching device, and the

shortcomings they sometimes faced because of it. The concept of "digital natives" (Prensky 2001), or the idea that those who have grown up with technology have a predisposition for naturally knowing how to use it, has been challenged by scholars, but that did not stop teachers from believing that students at West City High School were sometimes more capable than they were.

Hands-off teachers and technology

A teacher's individual teaching style determined how they incorporated technology into their classroom. Not every teacher at WCHS used technology in their classrooms during my time there. During the 2017-18 school year it was easy for a teacher to maintain a technology-free class, but this became increasingly difficult as Chromebooks became more and more commonplace in the high school. The school did not require teachers to digitize their classrooms, but as students became accustomed to using Chromebooks and Google products, they complained to teachers who had not acclimated to at least some degree.

Teachers who were hands-off treated technology like a classroom savior. They structured their classrooms and lesson plans so that their lives, and their students' lives, were made easier by the inclusion of technology. For these teachers, anything that could be put online was a benefit for everyone. Worksheets once printed in hard copy form and filled out by students were recreated online. Rather than writing responses in or circling multiple choice answers, students would open a Google Document and type in their answers or highlight the correct multiple choice option. Students then worked on assignments independently and submitted them to a teacher electronically, where they could be immediately graded, sometimes by the computer and

sometimes by the teacher. Teachers who were hands-off tended to rely on technology to teach their lessons and keep them organized, and interacted less with students in the classroom

Technology supplemented teaching

Hands-off teachers commonly used technology to convey classroom lessons for them, rather than presenting information by lecturing or having classroom conversations. In classes taught by hands-off teachers, students were commonly presented with resources on their computers and expected to work on them independently, either alone or with a peer or two. The first day I shadowed Isaac, a black high school senior, I asked him during each passing period where we were going and what he was currently working on in that class. As we walked to his sixth and final class for the day, he said they did nothing in the class, so he was not sure what they would be working on. I was used to this kind of response from Isaac, a disengaged student who did not have plans to continue his education after high school. When we took our seats, students were given an assignment online: they were to consult various W-2 documents provided for them in the class's Google Drive, which they then had to use to fill out a tax return document for a fictional person. After they were given the assignment, they were instructed to work independently on the task, which was due at the end of the class period. During the class period, the teacher, Mr. Thomas, a white man in his 50s, sat at his desk in the front of the room, appearing to focus on his own work at the classroom's desktop computer. Most days I sat in on Mr. Thomas's class were similar to this. Sometimes there would be a brief lecture to introduce students to the assignment of the day, but mostly students were left to work on their own on their Chromebooks. When this happened in Mr. Thomas's class, students used the opportunity to goof off and avoid doing work during class time. During the W-2 assignment, Isaac took the

opportunity to shout at a friend across the room, “Hey! Did you get a W-2 from the sneaker store we worked at?” after he mentioned to me that he used to work at a shoe store and never received a W-2. The shouted question led to his friend coming over to chat with us and show us the new tattoo he just got. They spent the rest of the class time showing me memes on their phones they thought were funny, rather than working on the in-class assignment. A few times the volume of the classroom started to increase as more and more students were talking and Mr. Thomas would tell the students to get back to work, while continuing to concentrate on whatever he was working on at his computer. Students responded by lowering their volume and continuing to chat with each other, avoiding their classwork. What was clear, in this case, was that when students were presented with a hands-off teaching style, they appeared to prefer to use class time to socialize and avoid work. This was a common scenario in the classrooms of hands-off teachers: students using class time for their own, often non-academic, purposes.

Technology gave students independence

Students working independently were not a given when teachers provided course content digitally, but hands-off teachers often structured class time in a way that encouraged students to work independently. This became clear to me after observing how teachers engaged students with Quizlet, an online learning platform that quizzes students on course content. Quizlet can be used one of two ways: students can use it on their own to practice answering questions through learning and matching games or students can play as a collective, using a join code to compete against each other in teams. Generally I would get excited when I heard students would be playing Quizlet in class. The energy was often high and lots of laughter ensued while students battled against each other. In the fall of 2018, Ms. Brown, a white teacher in her late 20s, was

prepping students for an upcoming test. On the days leading up to a test, teachers commonly gave students time, and sometimes tools, to study. These tools could consist of games, review sheets, and open time to ask questions about things they did not understand. In the last ten minutes of this class, after students wrapped up a review exercise, Ms. Brown instructed them to review using Quizlet to continue studying for their upcoming test, while she retreated behind her desk to work on her computer. Students were instructed to play alone or with a group of peers around them. The students around me did not log in to play. One girl next to me opened the Quizlet website, but never engaged with it and instead grabbed her smartphone and began messaging friends and scrolling through Snapchat. This day was the first time I saw Quizlet employed as a tool for independent study and students chose not to engage with it.

Hands-off teachers, like Ms. Brown, often believed the technology students had access to was a key with which they could independently take control of their education. Ms. Brown believed students were lucky to have Chromebooks – that their lives were easier as students having all of their school work, and also the power of the internet, at their fingertips. She believed the Chromebook had the power to increase students' intelligence, yet she also believed that students were not using their laptops in the "right way". As she explained:

> They don't think that way. Some kids do. Some kids will Google what they don't know. But most of the kids will do what I did as a student and be like, 'Oh, I don't know what she's talking about, well O.K.' But they have it! They have the ability to figure that out for themselves and to be an advocate of their own knowledge. Maybe I should be better at teaching them.

Ms. Brown, and other hands-off teachers, believed that when students did not understand a lesson or something being conveyed they should turn to their computers to figure it out. This belief, hinged on students' access to Chromebooks, removed teachers and peers from the equation and suggested that computers were a better resource. In Ms. Brown's case, she also

appeared to assume that students were already armed with the know-how to be their own advocates and questioned her role in teaching them this skill. In this capacity, technology can help fill a gap for students who are shy, scared, or uncomfortable raising their hands (Calarco 2018, Orenstein 2013) to ask for help or further explanations. Yet this misses the bevy of inaccurate information students can encounter by Googling the topics they do not understand, as well as the online resources blocked by the school.

Technology eased organizational burdens

Hands-off teachers commonly used technology to help ease organizational and logistical burdens for themselves. On any given day, a teacher may have assignments and tests to grade, in addition to lesson planning and organizing school clubs or teams for whom they may be responsible. As I showed in the previous chapter, technology could be used as a tool for streamlining work and personal expectations when it came to communication, but it could also help by automating or streamlining workplace processes. All teachers appreciated when technology could alleviate menial tasks, and hands-off teachers used technology to simplify their tasks as teachers as much as possible. Generally, if they found a digital resource added to their task list, they stopped using it. During a conversation with Ms. Brown, I asked how her life as a teacher had been changed since the inclusion of the Chromebooks. She told me that now almost all of her curriculum was online and she expected students to engage with her class through their Chromebooks exclusively. Content that was previously printed out was now online and was used by students in ways that mimicked the way analog lessons had been previously conducted. Ms. Ward, a white women in her late 30s and the school's technology director, referred to this kind of use as an "expensive pen and paper". For Ms. Brown, Chromebooks meant she no longer had

to make physical copies of documents or carry around physical documents for grading, and, in some cases, she no longer had to manually grade documents and exams if they were automatically graded by a computer upon submission.

Some teachers used technology to find different and sometimes "fun" ways to convey lessons to their students, while hands-off teachers did not tend to take this into consideration. When I asked Ms. Brown about how she used technology in her classes, she explained to me that she believed her content was fun and interesting on its own and did not require her to be creative with technology:

> A lot of teachers try and be super creative and make it fun. My content is fun in itself. I don't feel the need to always use different technology or whatever. Some teachers don't see it that way. When I first piloted [the Chromebooks] I tried everything. I tried to use that tech tool and this tech tool and I felt so overwhelmed. So I stepped back from that and I decided to just teach the content and have the tech tool be what it is. Because to me it's about the knowledge of the content versus making it super fun. If you like the content, it should be fun without fancy stuff.

In the classrooms I observed at West City High School, I had an opportunity to observe many different technology tools that teachers used to convey lessons and engage students. For those teachers who were more hands-off in the way they managed and organized their classrooms, complicating lessons with new tools was of little interest.

Hands-on teachers and technology

Teachers who were hands-on believed technology was best used to complement their teaching style. They structured their classrooms and lesson plans in ways that varied for students, often in an attempt to address learning differences and subjects they found challenging for students. For these teachers, technology was only used when they felt it had a specific benefit. Worksheets that were printed in hard copy before the presence of Chromebooks were put online,

but still made available in hard copy after teachers found some students preferred this to digital copies. Assignments were often submitted online, but hands-on teachers were open to students creating workarounds that worked best for them. Hands-on teachers used technology to connect students and bring them together. Teachers who were hands-on tended to rely on technology only when they felt it was truly the best option for students, and while technology could ease burdens for them, just as easily it could add additional responsibilities to their plates.

Technology complemented teaching

When hands-on teachers implemented technology into their teaching style and curriculum, it was to complement their lesson plans. These teachers saw technology as a way to diversify the methods they used to teach students, rather than replace former analog methods of teaching. The amount of technology hands-on teachers used varied, but they all shared the belief that technology should not be a burden to students and should meet a need that was not previously met, or met as well, before technology's existence in the classroom.

Mr. Kieff, a white English teacher in his late 30s, was a hands-on teacher who took technology's inclusion in the classroom, and its ability to address specific needs he identified in students, seriously. Out of all the teachers I spoke with at West City High School, Mr. Kieff spent the most time trying out new technologies and implementing them into his curriculum, while being simultaneously suspicious of technology's ability to teach students on its own. As an English teacher, Mr. Kieff's primary tools for teaching were the books his students read and the writing they produced, and with the inclusion of technology he believed he was able to help them understand concepts that could sometimes be difficult for students to pick up, "There's a disconnect there sometimes that I feel like I just want, I want them to see it. I want them to feel

it. Like, you know, let's listen to the music as we're reading the text. And stuff like that." He talked a lot about how he used technology to adapt to students' varying needs, comfort, and abilities. He talked about assessing students throughout the school year, not just by their grades, but also by the ways they were most comfortable in the classroom. He gave me a hypothetical scenario of a student who did not like reading in front of their peers and how he would address this in his class:

> Oh this student, they can read very well but they don't read well in groups. They don't read well out loud. So great, Flipgrid[2] is their avenue. That's what I'll have them do. And then you get that early [in the school year] and you're like, O.K. this is great because now they're engaging the way I want. I'm getting to know them how they should be known. You're not getting a small sense of who they are.

Mr. Kieff went on to discuss the importance of expecting students to still engage with the class and be able, in this example, to read along with their peers, but he also found it important to give students tasks where they could feel and be successful based on their own skills, abilities, and comfort. For Mr. Kieff, and other hands-on teachers, technology became a tool they could use to engage students in more personalized ways within the classroom.

Technology connected students to each other

Where hands-off teachers used technology to bolster students' ability to work independently, hands-on teachers used technology to connect students to their class and each other. Many of the technology resources teachers used in class could be used by students independently or together. Quizlet was one such resource. Where Ms. Brown previous

[2] Flipgrid is a social video application proposing to help amplify student voices. It works almost like social media for a class or group – students can create and post videos (using similar filters, effects, and editing tools as many social media apps) based on course content and requirements. It's often use as a way for teachers to engage students who have difficulty speaking up in class.

encouraged students to use the resource on their own, Ms. Furly, a white teacher in her early 30s, used it to connect the class together. Students responded positively to classroom connection such as this.

In the spring of 2019, Ms. Furly, a white woman in her early 30s, was preparing her students for an upcoming exam. She instructed students to take practice tests while she walked around the room, looking at their laptop screens and the work on their desks. She simultaneously made sure students were staying on task while checking to see if they had questions while they were working. Ten minutes into class she said, "I'm seeing some of you with paper out and you're noting the things you need to go back and study more later. This is good practice!" Students reacted to her prompt by reaching into their backpacks and pulling out notebooks so they could take notes. After students studied for half the period, she asked the class if they wanted to play a few rounds of Quizlet or keep working on practice tests. The students responded enthusiastically and she walked to her desktop computer to queue up the game. Students signed into the Quizlet website and their names were projected onto the smartboard as they logged in – some students used playful nicknames and we laughed in response as we watched them pop up on the projector. Once all students were signed in, Ms. Furly started the game and the Quizlet website shuffled students into teams of four. Students moved around the classroom to find their teammates and sit together, forming teams based on the animal names given to them by the game – snakes, penguins, and zebras, for instance. When Ms. Furly launched the game, excited chatter started between teammates, who worked together to answer questions quickly and correctly. As the teams of students played their progress could be tracked on the board – a line representing each team was projected, which moved across the screen charting the number of correct answers associated with each team. While students played, Ms.

Furly jumped around the room excitedly shouting, “Oh! Snakes are in the lead” and “It looks like a showdown between two groups right now!” She laughed along with students and reacted as teams in the lead fell back and others darted forward on the board. As the game progressed, Ms. Furly kept track of winners on the board, where she listed out each team and made a tick mark next to each as they gained points. Between rounds she asked students if they had any questions about the previous round and she spent a minute or two reviewing the concepts students were confused by or had difficulty with. As the class wound down, approaching the period’s end, she asked students if they had questions about the upcoming exam and gave out candy to the team who won the most rounds. After the bell rang and student shuffled out she let out a breathy, “Whew!” laughed, and asked me, “Do you like Quizlet days? I like Quizlet days!” Where the students in a hands-off class had little interest in engaging with Quizlet to review, the hands-on nature of Ms. Furly’s class helped create excitement among the students, which then led to interest and engagement with the game.

Technology often added to organizational burdens

Hands-on teachers received the same organizational benefits as hands-off teachers when it came to how technology would fit into their lesson plans, but they were also quick to invest time and energy into exploring new teaching resources. Technology could ease some of the burdens and responsibilities of being a teacher, but just as easily it could add to their task lists. In the case of hands-on teachers, the burdens could be extensive. Hands-on teachers, when they discussed with me how technology fit into their days, mentioned time freed up by tests that were automatically graded. When Scantrons had been used before, teachers had to manage test sheets and find time to scan them into the machine. Once tests moved online, papers were instantly

graded as soon as students hit the "submit" button. Teachers still had to grade write-in worksheets that had been moved online, but they enjoyed not having to carry papers around and home in the evening.

Hands-on teachers' approach to technology as a complementary resource meant they were often assessing the tools they used to teach and trying out new tools. Mr. Kieff was a teacher who put a lot of time and energy into trying out resources to address his students' varying needs. He told me about a new software he discovered that would quiz students on class material. He had previously been using software that was similar, but this new discovery would allow him to lump course material into groups where the program could then gauge more accurately what students were having difficulty grasping. As the software quizzed students, it would reshuffle how it asked questions, making it harder for students to progress through a lesson without fully comprehending the material. When we spoke in the spring of 2019, he explained the learning curve he faced when trying to figure out how to use the resource:

> The first time I used [this new software], the other teachers were laughing at me because it took me about eight hours. I thought, 'How the heck do I make this faster?' For each question I do this and that, but then I'm like, 'Oh wait, I can do this thing, too' or 'They also have this special thing so I'll try this'. And there's no "Control P" for pasting anything. But now I can pop out a test in under an hour and then it's in there forever. The other teachers asked me why I was doing it but I thought eventually I'll get better. I'm not deterred by it just because it was hard. Everything's hard in the beginning, that doesn't mean you shouldn't try it.

Mr. Kieff shared several stories like this one. He seemed to be constantly reevaluating his methods of teaching and how his students were learning. When he realized his students were having a difficult time understanding feedback after Socratic seminars, he wrote a grant for a 360 degree camera to record these sessions so students could go back and watch their performance afterward. For each new device or resource Mr. Kieff tried out for his class, he signed on for

hours of troubleshooting while he figured it out, which would often lead to hours of phone calls with tech support and sometimes wasted time when he would find himself going down the wrong rabbit hole. But for Mr. Kieff there was a two-pronged desire to using technology in his classrooms: getting students to better understand lessons and getting data for himself that would help him to understand the larger issues his students were having with his course content. But just as teachers were getting used to technology in the classroom, so were high school students. In the second half of this chapter, I will show how students acclimated and adapted to the varying ways teachers used technology in their classrooms.

How technology and teaching style impacts students

Students adapted to whatever teaching styles and classroom technologies their teachers required them to use. Just as teachers had preferred teaching styles, students had preferred learning styles, though they were difficult for teachers to consider as a collective. Instead, students had to adapt to the varying expectations and requirements of each teacher. This meant that throughout any day a student might use a combination of required and preferred means to participate in class activities and lessons. Most students had a mix of hands-off and hands-on teachers, which means they became accustomed to being in classrooms where teaching was both supplemented and complemented by technology. Because students in classes with hands-off teachers were expected to be more independent, they often used their own methods to find answers and figure out problems they faced in these classes, whereas students in classes with hands-on teachers benefitted from in-class lessons and conversation.

Just like their teachers, students used technology and the internet to find answers online and to help manage their workloads. Because students received little-to-no instruction on how to

use their technology or how to differentiate between accurate and inaccurate information online, students attempted to cobble together their own methods of getting things done. These methods were not always entirely off-base, but they did often require students to expend extra energy to get things done. I sat with students as they troubleshooted class requirements, such as inserting pictures from their phones into Google Slides for a presentation, and found their methods for doing so to be incredibly cumbersome. Generally, I found when students were left to their own devices without much instruction, the information they found was questionable, the methods they used were clunky, and they were often confused by what qualified as cheating or not.

Students use technology to find answers and information

In both hands-off and hands-on classrooms, students used the internet to search for information related to what they were learning in class, and incorrect answers and information were easy to come by. Some students would use the internet to find out more about what was being discussed in class. There were many times I sat behind a student and watched them quickly search up a term or piece of information to learn more. During a unit on the eye in AP psychology, the class was watching a video about a woman who was losing her sight and her vision due to Usher Syndrome. Dhirin, an Indian senior, who sat in front of me and intended to be a pre-med student in college, searched up the syndrome in Google and scrolled around a website for a few minutes. In examples such as this, students were able to hop online and dig further into something they were learning about in class or did not understand. In this case, if Dhiren found inaccurate information online about Usher Syndrome, since it was not a term he would be tested on, it would not necessarily hurt him or his grades. But when students were expected to find information that ultimately impacted their grades, their ability to search and

assess the accuracy of a website was important. When an unfamiliar word or term is used in class, they could look it up. If a disease, syndrome, equation, or process was mentioned, they could take a quick dive into the internet to find out more about what it was. In anatomy classes, I often observed students using their Chromebooks to look for diagrams of body parts that were being discussed. Anatomy teachers would commonly project diagrams onto the classroom board, but making out the nuance of, for instance, the chambers of the heart, was sometimes easier if it was on a student's individual laptop screen.

In the fall of 2017, I sat in a cluster of desks with several students while they worked on a worksheet in a hands-off teacher's classroom. Students were instructed to work in the groups they sat with and this group decided that, rather than work together on each question, they would divvy up the worksheet so they could finish faster. Once each student knew which set of problems they were responsible for, they grabbed their phones, put in earbuds, and turned on music to listen to individually while they worked. Students were instructed by their teacher to use their online textbooks to answer questions, but the students I sat with used Google instead. I watched as students typed each question verbatim into the search box to get answers. I could tell that some of the answers students selected from Google were incorrect – not necessarily because the information was incorrect, but because the context of the information did not match what the worksheet was asking. During the class, the teacher sat at her desk, engaged with the classroom's desktop computer. When the students in my group finished their sections, they shared their answers with their groupmates and did not review them together, nor did the class come together to go over answers, which would typically happen in a hands-on teacher's classroom. Students were expected to use this document as a study resource for class exams and without confirmation of the correct answers, students risked having inaccurate information from which to study.

Outside the bounds of class-specific resources, such as textbooks, students had more opportunities to find incorrect answers within all the online content they had to sort through.

Hands-on classrooms had similar exercises and opportunities for students to find incorrect information, but often students had an opportunity to double-check their work and have their findings confirmed as correct or not. Mr. Koslow, a white teacher in his late 40s, explained to me how he structured his classes and used technology for teaching. In his class, he often had students Google the terms they were learning and then discuss it with the class, so he could make sure his students were on the right track. He explained how this worked in his classroom:

> I think technology is great in the right context. I can say, 'Google this engineering keyword and write two sentences about what it is'. I hear a lot of kids, 'My teacher doesn't teach anymore'. I feel a really big responsibility to … I start my year off with a slide that says, 'I don't want to be a teacher'. And they make the joke, 'Hey dude, guess what? You're in school and you're standing in front of us so that makes you a teacher'. I want to be a mentor. I'm not the keeper of knowledge. We're going to go on this journey together and you're going to learn it. I'm going to be the one that says, 'Eh, let's shift here, or there. Let's try this or look here instead'.

Mr. Koslow knew his students would use Google to search for terms and find answers, and he also wanted to be active in this process and have conversations with his students about the answers they were finding, nudging them in the right direction if they were off base. Students coming up with incorrect answers on assignments is nothing new. The same issues could happen with teachers who relied on textbooks as teaching devices. But leaving students to figure out answers for themselves without helping them assess their work meant students could get lost in the vast array of information on the internet, especially when they knew they could type questions in search engines word for word and get instant results. Students who were left to find their own information online, who did not get an opportunity to review the information they

found, were often left with answers that did not fully line up with the expectations of their teachers.

How students learned to use technology, the internet, and assess the accuracy of the information they found was all over the map. Most students I talked with said they learned how to type and use the Microsoft Office suite of products in the fifth or sixth grade and that was the extent of their technology training. Some received in-class instruction when a project called for students to use technology they had not previously used and were unfamiliar with. Most students with whom I spoke said they received little to no training in high school about how to, for instance, conduct research. When I spoke with Ms. Ward, the school's technology director, she told me about some of the downsides she had experienced with the inclusion of 1:1 technology for students:

> Some of the negatives I've seen are, for me, an information literacy piece. We have a lot of teachers that are quick to say, 'Well, just go ahead and Google it or find an article' or, you know, 'cite something' and there's not a whole lot of instruction yet about how do we pick a really good, credible piece of information from the internet when we say things like, 'just Google it'. I've seen a bit of shying away from partnering with your library media specialist where you used to have to come to the library for that information. A lot of that's happening in the classroom now. I feel like we have a little bit of a gap there and I'm hoping we will eventually catch up. To get teachers to even understand that academic databases is something completely different from a Google search has been a bit of a leap.

Because of the ease of Googling answers, Ms. Ward felt that teachers, and students, relied on this too heavily, often leading to incorrect information. This was not a student-only issue as far as Ms. Ward was concerned. In her experience teachers, just like students, often did not know about the best ways to find information online or how to instruct their students on finding information. Due to a largescale lack of technology training, students were often unaware of how to make technology work for them to quickly get the information they needed, even when they knew

exactly what they were looking for. Ms. Ward told me about a student who was required to find a scholarly article published in 2019 on a topic being covered in her English class:

> I overheard two girls just two weeks ago that were talking about how the hardest part of an assignment for their English class was finding an article that was published in 2019. They were like, 'Once I found the article it was fine, but it took me like two hours to find the article.' So of course I asked them, you know, what was your method? How did you go about trying to find an article? And they said, 'Well, I just Googled it and then I had to sit and scroll and scroll and scroll and see which one was published in 2019.' Versus sorting the results with the newest articles at the top or using an advanced search to say you only want things published in 2019. Those are skills and tips that we could give them that would not take a whole lot of class time to teach and would save them so much time.

During a similar conversation with Ms. Brown, I asked how she would teach students to search online for answers or things they do not understand. She explained that students can do a "Google smart search" via Google Scholar when they need to make sure the answers they were seeking were coming from scholarly, peer-reviewed sources. Google Scholar allows users to search for scholarly articles and books, though not all of the articles that are searchable are able to be read in their entirety (often, a reader is limited to an abstract). Also, a 30-page academic journal article may not always be the best option for a high school student trying to quickly grapple with the basics of, for instance, Usher Syndrome. When I mentioned that Google Scholar may not always be the best place to get information if the question a student has is not academic in nature, I asked how she tells students to find reputable information, to which she said, "Find it and find it again and find it again." For students enrolled in classes with hands-off teachers, like Ms. Brown, there was often a fair amount of independent troubleshooting students were expected to do. After Ms. Ward's observations that students were not always equipped with the basic skills of how to narrow their searches and results, this might have been more difficult and time-consuming for some students.

Not every time a student turns to the internet for answers is a struggle. Sometimes searches and internet assistance, especially when guided and supported by teachers, were productive and complemented the lessons teachers were already giving students. It was common to see teachers of both styles make suggestions to students on where they could look for additional support and resources online. As AP testing neared in the spring, AP teachers led students to Twitter accounts, Quizlets, and online flashcards to help student study and prepare for upcoming exams. For students who were struggling or looking for different ways to study, these resources could help meet needs outside the classroom, after school, and they were already vetted by teachers.

Online videos were constantly mentioned by students as helpful when they did not understand something or needed extra help. Khan Academy[3] was one such complementary resource students repeatedly told me about. Many students mentioned math teachers who encouraged them to use this website when they needed extra help with something they did not understand or in special circumstances, such as helping to catch up on content that was missed when a student was absent. Because Khan Academy was a resource promoted by teachers, students could count on it to give them accurate information. In these instances, students did not have to spend extra time looking for supplementary information and then assessing its accuracy (or not) before using it for homework help, since its use was already encouraged by teachers.

Students and teachers were also able to consult with Ms. Ward, the on-site internet expert, positioned in the library, for help with resources. The library at WCHS was a free-flowing space and students often would hang out there during their lunch hours and free periods. I regularly saw students working together in the library, socializing, and utilizing the printers

[3] Khan Academy is a non-profit company/website that seeks to provide free education worldwide, covering a range of topics as well as test-prep assistance.

during free periods. Thus, outside of their teachers, there were places students could turn for assistance with resources, if they knew about them. Because of the ease with which students could find information online, however, cheating was also a common issue.

Students use technology to cheat

A common thread of complaints, shared by teachers and students, was the amount of cheating that happened through technology. While at West City High School there were cheating scandals that happened within the school, the district, and the nation that impacted West City students. Teachers were constantly trying to adapt to students' ingenuity for cheating and plagiarism. During my first few months at West City, as students were getting used to me, they would often bombard me with questions during passing periods. During one instance, a student asked, "So what have you been learning about us?" Another student, sitting nearby, piped up on my behalf, "That we all cheat?" which caused us all to chuckle. None of the students I talked with ever claimed to be involved in cheating, but they were all familiar with the ways it could happen. Many exams students took that were non-standardized and created by their teachers were taken online. With a connection to the internet, and a screen that was difficult for a teacher to monitor, it was easy for students to Google answers during test time or consult their digital notes. To prevent this, most teachers used testing software online that blocked a student's ability to navigate away from the testing window. Students found other ways to be creative, but when it came to test taking, their options were limited.

The most common way students cheated was by taking pictures of exams with their smartphones or sharing content in group chats. Shortly after I started my fieldwork a teacher pulled me aside to ask me if I had heard about a recent exam students had cheated on in her

class. When I asked how she found out, she told me her entire afternoon class got As, with many students getting perfect scores on the exam. Mr. Ramirez, a Mexican American teacher in his late 30s, told me about a student he caught taking a picture of an exam, "I've caught one student taking a picture of an exam. Essentially what I did, I saw him take the picture and I went up to him and said, 'Show me your phone'. I didn't touch his phone, he did it himself. And he did and it was out there." This became a common enough practice that some teachers required students to place their phones on the whiteboard ledges at the front of the classroom during test time. This also had an impact within the district, where finals were previously created across high schools. However, it became too difficult to keep test information from being shared between students throughout the district, so final exams switched to being created at each high school, in an attempt to stop the spreading of testing information.

If taking a picture of an exam was not possible, students would instead share, via social media or group texting apps, the content they remembered appearing on a test or quiz. Mr. Kieff told me it was impossible to have pop quizzes in his classes anymore because students would share it with others who took his class in later periods. "I give a pop quiz first hour, by third hour it is no longer a pop quiz. So how do I fight that? They have a GroupMe for my class, so they're constantly exchanging information. Someone posts it on GroupMe and now it's out there."

In addition to taking photos of tests, students used their ingenuity and the internet to find creative ways to cheat. Within WCHS, and around the world, students used memes[4] posted to Twitter to share information about the content that appeared on the PSAT and AP final exams each year. In these memes, students would often tried to conceal, via jokes, content that appeared on the exams. Because of the timing of tests taken around the country, students were able to view

[4] Ryan Milner (2016) defines a meme as "The linguistic, image, audio, and video texts created, circulated, and transformed by countless cultural participants across vast networks and collectives."

memes posted by students who had already taken the exams in other time zones, to get hints on what would be making an appearance.

Figure 1: Example of an AP Psychology meme created by a student. Shared with permission.

Shortly after students took the AP Psychology exam in the spring of 2019, Ms. Furly told her students that the College Board, the organization in charge of many standardized tests, were cracking down on students' meme-posting because they were considered cheating (Ellis 2019, Glum 2017). She told students that if they had created or engaged (by "liking" or reposting) with any testing content online, they needed to delete and "unlike" the posts. The College Board, Ms. Furly said, was looking for students who had posted about exam questions and would be canceling the scores of those students. Students frantically grabbed their phones to delete posts and unlike content. Posting memes online that include test content was considered cheating, but most students did not realize this was the case. While they looked to Twitter for memes to get hints on what showed up on the exam, they also enjoyed creating the memes as part of an informal tradition. Before they were enrolled in AP classes they had watched their peers post and respond to memes, not understanding the humor until they were themselves enrolled in the class. Once they were enrolled they looked forward to taking part in the tradition themselves, not quite

realizing that to participate in this tradition was to participate in cheating. Thus, students were surprised and worried by Ms. Furly's announcement.

The ease of access to information online made plagiarism another way in which students used technology to their advantage for cheating. Ms. Anderson believed that technology was not leading students to cheat more, necessarily, but that it was just easier for students. This ease, she thought, might make it unclear to students that it was wrong:

> I don't know that plagiarism is any more prevalent now than it used to be. But I think that the ease with which you can copy and paste digital text is so much higher. And if kids are not informed about what's wrong … for something that feels so easy to be wrong when it doesn't feel wrong and you don't see the consequence of the stealing of intellectual content … it's hard to translate that.

It is difficult to tell if students were unaware of what counts as plagiarism and what did not, but the prevalence of content available for them online – websites such as Khan Academy, social media, and other resources created specifically to be support for high school subjects – made Ms. Anderson's assumption reasonable.

Students' lack of tech know-how can add to their school day burdens

When Chromebooks were rolled out at West City High School, most teachers I observed diligently walked students through how to access various resources within Google Classroom. Rather than simply telling students to "open up their unit five packets", a teacher would often remind students of the link path they needed to follow to get to the requested document, sometimes showing them the navigation steps from their own computers, projected at the front of the room. While giving these instructions, and before beginning the lesson for the day, teachers would walk around the classroom, peeking at students' Chromebook screens to make sure they were finding what they needed to find. It was common to see a teacher pause at a student and

lean over to provide quick instruction or help them back out of a dead-end. As the year moved on, this instruction ceased while students became more comfortable with the Google Suite and how their teachers organized class materials online.

Most of the students I interacted with had a high level of comfort with technology – they could find the materials they needed for classes, format documents, and navigate around the internet. This confidence spilled over into things they did not know how to do, as well. Students explained to me how they would go about figuring out how to perform a task on their computer they were unsure of, which often included Googling the answer, asking a friend, or asking the teacher if it was not disruptive. In some instances students would go to the high school tech support if what they were trying to do was a bigger, or more novel, task.

Often where students lacked skill was with technology shortcuts or when trying to pinpoint specific needs. Students commonly lacked the skills that would allow them to get answers or results that were tailored to what they were looking for. When I collected parental permission forms for interviews from students who were minors, I was repeatedly surprised by how much I had to walk them through the process of the online form I used. The form, which I shared with them through a communication app, allowed parents or guardians to read the details of my study before prompting them to give permission for their child to be interviewed and recorded. Parents were able to e-sign the digital form from the touch screen of a mobile device. With just about every student, I explained, “You can just hand your phone over to your parent and they can sign right on the screen”. This would sometimes lead to further questions before we figured it out together. One student, clearly stumped by the task, ended up printing out a screenshot she then brought to our interview.

It was harder to see, and students were much less inclined to talk about, larger technology issues. These issues were present, though much less prevalent. One of the first things I noticed when watching students was the split between those who could touch-type and those who could not. Quantity of typed words is not necessarily better than quality, but students who could type faster could write more and finish exams, assignments, and notes with time to spare. They were able to more easily consider grammar when writing and have more time to edit. Often when students typed exam answers, they would ask teachers if spelling and capitalization counted, responding with a groan when teachers told them it did. I asked all the students I talked to if they could touch-type and when they learned to type. For most students, they took typing lessons around the fifth or sixth grade and none had taken any sort of computer class in high school. West City High School did not assess students on these skills when they entered, or when they received their Chromebooks. Thus, it was possible for a student to receive their Chromebook with a lot of insecurities about how to use it or how to properly type.

When I asked teachers if there were classes available or what the route would be for a student who was uncomfortable with technology, there were no firm answers. Some had thoughts about how they might go about figuring it out for themselves – talking with a student's counselor, seeing if someone in the technology department could help them – but there was no clear path in place. If an assessment tool was in place early, students with technology blind spots could be caught early and required to take a summer course before the school year started, but no such intervention was in place. A student who struggled with technology could easily be missed. One teacher, when I asked why there was not an assessment of skills in place told me:

> Part of it is that those skills are not part of any sort of national assessments. When we look at the SAT and the ACT, we look at Illinois standardized tests, none of those things are formally assessed. And when all of those things are tied to funding and school ranking and school report card, there are things I think we would love to put as more

> important than some of the pieces that are assessed. But at the end of the day, you're kind of trapped in this system where you have to keep playing the game. But again, by the time you look at the SAT, ACT tests, it doesn't show up anywhere. And so I think we find it valuable as educators, but at the end of the day, I think a lot of those instructional minutes get spent on things that are assessed more formally than what we assess here.

It was unlikely that a student for whom technology was a challenge would be missed entirely and for a long time, yet the current system in place at WCHS seemed imperfect. As more and more generations of students have found themselves surrounded by technology from birth, the assumption that they are naturally imbued with technology skills is lacking. Larger issues may become less and less common, but as long as an inequality of skills and know-how exists, technology can become a burden for students in addition to being an asset.

Conclusion

The teachers at West City High School all had to find ways to use technology in their classrooms as Chromebooks were rolled out to students at the start of the 2017-18 school year. The school largely allowed teachers and departments to decide for themselves how they wished to implement technology into their lesson plans, and to what extent. Ultimately, this led to teachers holding two differing views on how they used technology in their classrooms and how their teaching style should accompany it. Teachers who were hands-off tended to rely on technology to supplement their teaching, letting students read or watch lessons online independently and using it in ways that made their lives organizationally easier. Teachers who were hands-on in their teaching styles, on the flip side, used technology to complement their teaching style, to connect students to the class and each other, and often took on more organizational burdens to use and learn technology that would best serve their students.

Alongside teachers, students also had to adapt to the prevalence of technology within West City High School. Students learned and figured out how to manage their lives as students with technology, in addition to adapting to the varying requirements of their teachers. This also meant that where students were left to their own devices, they had to figure out for themselves how to find answers to class-related questions, with varying degrees of success. Part of this adapting was learning new ways to use technology to their advantage to cheat or plagiarize online content.

Thus, for both teachers and students, the prevalence of technology in the classroom could be a huge asset, but an asset that still needed to be monitored and managed. On its own, technology did not make teachers better at conveying lessons or students better at receiving them. Instead, it gave both groups a new tool through which to carry on their roles as they each desired. An engaged and experimental teacher now had a tool to be more engaged and more experimental, and a student prone to cheating had a new device through which to do so. On its own, technology would not solve or help these issues.

CHAPTER 2: COMPETING ATTENTIONS THROUGHOUT THE SCHOOL DAY

In the spring of 2019 I sat in an interview with Ms. Furly. We were talking about what kinds of technology she used on an average day, both personally and professionally. Ms. Furly echoed the answers I had heard from many teachers and students: she used her school laptop, her smartphone, and a device at home for streaming TV daily. She unlocked her iPhone and scrolled through her application icons to see what smartphone apps she used on a regular basis. She told me about social apps for keeping up with friends and family, which apps she tried and loved, and which apps were exciting at first but ultimately felt like too much work. She showed me how she kept herself and her family organized by keeping notes on future plans and how she ordered groceries she later picked up at the store. She opened an app on her phone and said, "I have an app that I use to check in on my daughter to see what she's doing at daycare." She was the first to mention an app like this. As I asked her questions, she opened it up and started showing me. "So, it says she started her nap at 1:06pm. It's 1:53pm right now. It also says what they did today. They had a parade for Memorial Day. They are having popsicles. They're coloring and they also did show and tell." She told me how her daughter brought her binoculars to school to show her class. She continued swiping the touch screen of her phone, rattling off social apps she used to varying degrees, ending with:

> Oh, and GroupMe[5]. There's a big teacher group on GroupMe. It's called 'Book Club' and it's when everybody goes to the bar on Fridays. It's kind of funny. I just got like four messages 'cause it's Friday and everybody goes to the bar down the street. Like, 'Are you in?'

[5] GroupMe is a chat application commonly used at West City High School for communication between teachers and students. A major benefit of using GroupMe, rather than a group text message, is that it can function across mobile operating systems and can rely on a Wi-Fi connection, rather than mobile data, which can cost users money and/or be in short supply.

As Ms. Furly described to me the apps she used to manage her professional, social, and family life, I could see the ways different arenas of her life bled over into each other through a digital medium. This digital bleed, then, complicated the notion of fulfilling a single role in a given physical or social context.

The idea that a student or teacher (or anyone) would ever be capable of performing one role at a time, without conflict, is an ideal scenario that only exists theoretically (Weber 1930, Weber 1946). Yet technology, I argue, expanded the accountability individuals had to their various roles due to their expanded accessibility. With the inclusion of technology, friends, family, and other contacts inside and outside the high school had continuous access to teachers and students during the school day. Individuals have always been accountable to multiple roles simultaneously, yet technology made it more difficult to escape these competing role expectations. Smart phones and other internet connected devices provide immediate access to their users, making them constantly accountable to all the roles they are expected to fulfill.

I argue that increased accessibility and connectivity via technology can create role competition for teachers and students, while simultaneously providing resolution for the conflicts felt between roles. When a student or teacher *feels* the conflicting expectations of multiple roles, they experience role overload (Coverman 1989). When a student or teacher *takes action*, competing "in time and resources with actions necessary to meet another expectation" (Backman 1970:315) they experience role competition. With connected technology, users not only feel conflicting and competing expectations but are also given the resources they need to fulfill these roles, leading to, what I will call, digital role competition. In this way I extend the concept of role competition to address the access and expectations that come with internet-connected devices.

In this chapter, I mean to define the roles of teacher and student as ideal in nature, not taking into account the multitude of identities individuals embody. In this way I follow Acker's (1990) lead of defining workers as "abstract" and "bodiless". Individuals inhabit, and are responsible for, multiple roles (Mead 1934). For instance, Ms. Furly, mentioned above, fulfills the role of teacher, but she is also a wife, a mother, a daughter, and a friend, among other things. In an ideal situation, Ms. Furly is responsible for performing the role of teacher when she is at West City High School. Yet because there are competing expectations within Ms. Furly's personal and professional life, she does not stop being those other roles when she is teaching. Ms. Furly feels this digital competition when she sees a notification on her phone from her daughter's daycare while she is in the middle of teaching a class. A student feels this digital competition when they receive a text from a parent while working on a project with a classmate, putting their roles of student and child into competition. As I show, expectations about accessibility and representation produce a complex relationship to the social world inside and outside the high school that is increased with the prevalence of digital devices. This relationship is then subjectively viewed by teachers and students as in competition with the expectations of the school, despite sometimes aiding the demands of other roles.

In this chapter I consider how the inclusion of technology can increase the disruptions experienced by high school teachers and students. Students and teachers found ways to self-manage the tension they felt between multiple roles at any given time, while attempting to live up to varying expectations of individual classrooms. Throughout my fieldwork, I watched students and teachers manage competing roles during the school day. Students were expected by parents, bosses, friends, and coaches to respond to messages in a timely manner. Teachers were

responsible to their partners, graduate school professors, children, and colleagues, just like Ms. Furly above.

Additionally, social media, how it is used to communicate and how students make decisions about what to post (or not) can bring roles into competition, commonly referred to as context collapse (boyd 2014, Marwick and boyd 2011). The way that students and teachers represent themselves online can be in conflict with school expectations. On the flip side, the ever-present digital documentation of people's actions almost solidifies the duality of the youth/student roles. So, when a kid posts a picture with a red Solo cup[6] – off campus and after school – they are judged (by other parents, the school, college recruiters, etc.) not as youth, but as a student. The simultaneous considerations of a student's online and offline activities is what Jurgenson refers to as "augmented reality" (Jurgenson 2012). Just as digital bleed introduces the demands and expectations of a student's mom into algebra class, context collapse introduces the demands and expectations of a teenager's school into their social media life (Lane 2019:38), lowering the barrier to entry for those who wish to surveil students (Joh 2016).

Digital role competition during the school day impacted students and teachers in similar ways. Yet, because teachers are adults, they, and their use of technology, was often seen as more legitimate or less intrusive to the school day. In what follows, I will discuss the competing roles managed by teachers and then those managed by students throughout their time at West City High School, as well as how both groups attempted to manage this competition, and how it was all mediated via connected technology. Finally, I will end with a discussion of how representation online can come into conflict with the school day, due to the collapsed contexts of

[6] Almost every student I talked to mentioned red Solo cups as something to monitor on social media. As students told me, viewers always assumed that red Solo cups contained alcohol, even if they couldn't see the contents of the cup. For students who were attempting to monitor their social media presence for future academic or professional opportunities, they made sure there were never pictures online of them, or them with a friend, holding red Solo cups.

students' social audiences. Even when a student posts a picture off-campus and not during school hours, they can still be held accountable by the school for the activities depicted on their social media profiles.

Teachers and digital role competition

When we think about smartphones infiltrating schools, we often think about this in terms of the teenage students, rather than teachers. Magazine articles and popular press books discuss how distracted students are by their smartphones and social media, but we often do not hear about the distractions that teachers face. For both work and personal reasons teachers use smartphones when they are at school.

Teachers also set the rules for how, or if, students are able to use smartphones during class time. The rules for smartphone use at WCHS were not always so clearly defined, a topic I'll cover more in-depth further along in the chapter. But regardless of how a teacher chose to manage phones in the classroom, they often benefited from, and took advantage of, students having easy access to smart phones with a data connection.

Teachers use smartphones for personal and professional purposes

Accessibility via technology heightened competing role expectations for teachers, but often teachers told me how it *helped* them manage non-school roles during the school day, and vice versa. For Ms. Furly, mentioned previously, this meant she could mentally prepare for her evening after work by knowing what her daughter had done at daycare. If, for instance, her daycare app reported that her daughter had played all day in the sandbox, Ms. Furly would be

able to schedule in unplanned bath time while still at work[7], making sure to leave time to grade student essays.

In addition to using smartphones to enhance productivity, teachers could be just as distracted by their phones as the students they critiqued. During an exam day in the fall of the 2017 school year at West City High School, I sat in a desk alongside students while they took a test. The classroom was quiet, except for the sounds of pens and pencils writing on paper. I watched how students hunched over their desks, stretched, and tapped their pens while they read test questions. Their teacher, Ms. Brown, sat in the back of the classroom, behind all of the students. The teachers I observed fluctuated between sitting at the front of the classroom and sitting behind students during test days. Often they sat in the back of classrooms when students were taking tests on their Chromebooks, so they could see students' laptop screens. On this day Ms. Brown chose to sit at the back of the classroom while students took a test on paper. On the desk where Ms. Brown was sitting, she had a stack of papers and her iPhone. Each time I looked back at Ms. Brown, she was interacting with her phone, head bent down. Jared, a black junior who sat in front of me, took advantage of this distraction and grabbed his class folder. He looked through some of his notes and pulled out a blank piece of paper. While Jared flipped through his notes, I glanced back at Ms. Brown. Watching this activity, I was nervous that he would get caught but also that Ms. Brown would miss this indiscretion, which I initially thought was test cheating. Jared ending up passing the blank paper back to his friend, MK, a black junior, who had come to class unprepared for the exam, without scratch paper of his own. MK, a student woefully checked out of school, did not have all the materials he needed to take the test and his friend was trying to help him. Throughout this activity, and initially when students were settling

[7] Thank you to Liz Prugh for help with this example.

in to their tests, Ms. Brown did not look up from her phone. It was not until students finished taking their tests and walked their finished copies to the front of the classroom that she looked around the room a few times and shushed students who were whispering, reminding them that tests were still out and some of their peers were still working. The presence of smartphones adds a unique kind of distraction into the classroom. Smartphones can decrease users' cognitive capacity simply with their presence (Ward et al. 2017). If we know that smartphone distraction has led to increased pedestrian traffic fatalities (Retting 2020), it is safe to assume classrooms are experiencing a similar kind of impact.

It was common for teachers to have differing opinions about student connectivity versus their own. When teachers did discuss the digital distractions that competed for their attention, it was typically with the belief that the roles competing for their attention were more legitimate than those of students or that teachers, because they are adults, were able to manage their competing distractions more successfully. This assumption is uneven, as nearly every teacher I talked with told me about the social media they used to communicate with friends and/or waste time when they were bored at school (though, as they claimed, their use was less frequent than students'). Often, it seemed, because teachers were in control of classrooms, their smartphone access was permissible and made legitimate by their formal positions of authority. If, for instance, a class started a minute after the bell rang because Ms. Brown was checking in on her daughter, this was not seen (by her, as the authority figure in the room) as a classroom distraction. However, if a student was hunched over their phone a minute into class to finish a text conversation with a parent, it was seen as a distraction. Often what determined if competing role expectations were in conflict was who was in charge of the space in which it was happening, rather than the behavior itself. Because teachers themselves felt the push and pull of expectations

based on their own experience managing connectivity, some teacher were reflective about students' use of smartphones in class, though not all were.

Ms. Brown, during our conversations, often conveyed the opinion that students were too connected to their phones. After I mentioned to her that I often saw students texting with their parents during the school day she told me she had caught students Facetiming in her classes before:

> MS. BROWN: I've had kids Facetime in my class before and I've shut that down
> SARAH: With another classmate? Who were they talking to?
> MS. BROWN: Their mom. I mean, I get it. Because I talk to my mom during the school day. But she's also babysitting my child at home.

Ms. Brown is a good case of contradictory opinions regarding how technology should be managed in the classroom. She was a teacher with comparatively lax rules about smartphones in her classroom. Students were able to keep their phones on their desktops during class time. Through the quote above, Ms. Brown also communicates a belief that students and teachers should be held to different standards in regards to their actions in the classroom. She mentioned that through the evolution of technology, students were now connected via smart watches, making it more difficult for her to manage their technology use in class. Yet Ms. Brown also wore a smart watch that she would regularly glance at during class. In her quote about a student Facetiming, she acknowledges that she understands why students would be in contact with their parents, and when she added, "But she's also babysitting my child at home." she indicated that her cause for being in contact with her own mother is for a different, and perhaps better, reason than students have for being in contact with their mothers.

Teachers vary in their expectations for classroom technology management

Within West City High School, teachers created the rules for technology in their classrooms that students adapted to. West City High School did not have any schoolwide rules about smartphone usage, leaving teachers to determine what was appropriate or inappropriate use. Teachers typically fell into one of three camps in terms of classroom phone management: 1) those who allowed students to keep phones on their desks and available, 2) those who did not allow phones to be out and would confiscate them if they saw students using them, and 3) those who had students deposit their phones into cubbies or bins during class time removing the potential for temptation. Teachers who fell into the first group allowed students to have easy access to their phones, but would stop a student who they felt was too distracted. These teachers with more lax phone rules told me they believed students had complicated personal lives and they wanted to respect that. Ms. Anderson, a white teacher in her mid-30s, explained her expectations to students at the beginning of every new term. In her classroom, students were allowed to have their phones out, but were encouraged to warn her if they were expecting an interruption so she knew they were not simply distracted. As she said, "Students will tell me in passing period, 'Hey Ms. Anderson, my grandma's in the hospital. My phone is going to be on my desk the entire period. I don't want you to be upset, but if there's a call, I'm going to take it'." From her perspective, she wanted students to have the freedom to be accessible during personal emergencies. As she said, "I find that when you treat a human like a capable cognizant being who can make a decision and then hold them to what they said they were going to do, you get much better behavioral results. And I find that true with cellphones, too." Ms. Furly had similar rules in her classroom. When I asked her how she determined which students were distracted or goofing off on their phones, she said:

> It depends on how ridiculous the thing is that they're doing. Because I check my phone, too, in class. So maybe I'm more empathetic with it. And then maybe even my mood

> plays a factor in it. But I also believe in the accountability of kids. Like, they have their own needs to attend to. I can't assume the worst. That they're just doing it because it's a reflection of me and they hate me.

Ms. Furly was a good-natured teacher who managed her classroom by building relationships with her students, rather than relying on the authority of her position. As she explains in the above quote, she did not believe that students who misbehaved in her class were doing so because they disliked her. Like Ms. Anderson, she believed students were trying to navigate their personal lives, and any distraction was not a reflection of how they felt about her. I often saw Ms. Furly teaching from different vantage points in her classroom. During class, she would fluctuate between standing in different spots in the front of the room as well as walking towards the back of the room. In these instances when she stood near the back of the room, it was commonly near a student who had their phone out, so she could glance at their screen. Sometimes this would lead to Ms. Furly asking the student to put their phone away or moving on and continuing with her lecture.

During a conversation with Ms. Brown, a white teacher in her late 20s, about the high rate of connectivity between students, she explained the evolutionary process of connected devices within the classroom during her time as a teacher. As she saw it, regardless of a teacher's classroom rules, technological advances were always going to provide ways for students to be connected and accessible to their various social and personal networks:

> When I first started teaching and I was student teaching, it was, 'Don't have 'em [phones] out. Tell the kids to put them away.' Now it's not enforced. You can't tell a kid to put it away. And so sometimes when it gets really bad, I'll tell kids to flip it over. So that if it's on your desk, cool. I know that makes you feel better. But flip it over. But now you've got [smart] watches. They're constantly tuned in.

Ms. Brown brings up an interesting point in this quote, not only that school policies at West City High School have adapted to the prevalence of smart technologies, but also that the products and

connectivity students engage with have evolved. As Apple Watches and other smart watches have become more common among people who can afford them, having students keep their phones in backpacks or in cubbies does not cease their connectivity to each other and the outside world. The smartwatch technology as of 2019 may make it impossible or difficult to respond to communication via the watch interface, but it maintains a user's accessibility to the outside world, which can still be distracting to users. Thus, regardless how a teacher chooses to manage smartphone use in her classroom, students can still be impacted by their phones even when they are physically removed and placed in cubbies. For students with watches, connectivity is maintained, though often limited, while other students may still feel the stress of the notifications accumulating on their phones – a phenomenon I will discuss further along in the chapter. This can impact a student's ability to concentrate as well as a teacher's ability to discipline, if she is unable to fully remove students' ability to be connected and accessible.

Teachers benefit from students having smartphones

Even for teachers who had strict rules about smartphone use in class, they still assumed students had a phone with a data plan they could use if asked to. This expectation that students' personal devices were not allowed in class unless they were being used for teacher-sanctioned purposes was in conflict with how students wanted, and were sometimes expected by others, to be available via their phones. Teachers' abilities to call forward the use of smartphones meant that students were expected to have their smartphones available to them in many classes, even when they were expected not to use them on their own. While shadowing Haley, a white high school junior, one day, her Spanish teacher ended the class by having students play the online game, Quizlet, to review class content. The teacher displayed a code on the projector and

students, who had previously placed their phones in their backpacks, pulled them out, navigated to the game's website, and typed a participation code in. While they waited for all their peers to sign in, they put their worksheets and Chromebooks in their backpacks, and arranged themselves around the room into the teams the game automatically shuffled them into. In this case, the presence of smartphones, and their connection to a data plan, was expected by the teacher. As the students played in the final minutes of class, I leaned over and asked Haley, "How do you play if you don't have an iPhone[8]?" to which she replied with a shrug. To be fair, most students I met did have smartphones with data plans they could use, though not all of them did. Some students had mobile phones, like a flip phone, while other students had smartphones that did not have accompanying (or unlimited) data plans. But because teachers often assumed students had phones that were in good working order and connected to data plans, students who did not have a smartphone were responsible for bringing this to their teacher's attention. Mr. Koslow explained how he learned this within the classroom, "It's funny how you learn all the social issues of being a teacher. Because I never realized it can be humiliating to ask somebody about their phone." Mr. Koslow, who taught trade and engineering classes, told me he had had homeless students in his classes before, so he was sensitive to assuming all his students had access to certain kinds of technology. Despite this, some teachers would often implement games or social media accounts into their curriculum to help students study for upcoming exams. These games often relied on students having smartphones, or, at the least, they were easier to use if a student had a smartphone, whereas social media could only be accessed on a smartphone because it was blocked on students' Chromebooks. Students told me about YouTube videos and articles on

[8] High school students at WCHS almost always had iPhones as their smartphone. Having an Android or Microsoft device, rather than an iPhone was taboo. So much so that when I switched, halfway through fieldwork, from an iPhone to a Google Pixel students noticed and asked about it, inquiring if I was "poor". I'll discuss technology as status symbols in chapter three.

periodical websites that teachers posted for class not realizing they were blocked by the school's Wi-Fi. Students would adapt by accessing the articles from their smartphones, which were connected to their personal data plans, rather than the school's Wi-Fi. Often when this happened teachers would cancel the assignment once students brought it to their attention, but not before some students had put in the work of figuring out how to access the video, article, or the link from their personal devices.

When discussing his policies on smartphone uses in the classroom, Mr. Ramírez told me about the Spanish classes he taught. He described himself as "pretty lax with technology use in the classroom". He said after a recent department meeting, the foreign language teachers had decided to get phone carriers for students to deposit their phones into during class time. He did not see himself using these every day, but liked that they would be available during days he did not want students to be distracted by their phones. On days when smartphones were permissible in his classroom, he recommended translation applications for students to use when they needed help. Using translation apps was the primary reason he said smartphone use was permissible in his classroom. Similar to the use of Chromebooks in the classroom, having a personal smartphone was generally expected, and relied upon, by teachers. For students who did not have access to a smartphone or a data connection, there were hardcopy Spanish dictionaries they could use in Mr. Ramírez's class, but teachers generally operated under the assumption that students could rely on their personal devices to access additional resources for class. An argument for giving Chromebooks with internet access to every student is that it levels the playing field for students when it came to connectivity and access to resources. But, because of the restrictions on the school's Wi-Fi, students still had to rely on personal devices to navigate around these restrictions.

Teachers also relied on students' access to smartphones to communicate with them outside school hours. In the evening, outside of school, teachers would send reminders out to students via communication apps or Google Classroom notifications. Often when teachers passed out permission slips students needed to return with a parent signature, they would ask if students wanted a reminder sent in the evening. Receiving these kinds of notifications outside of school was not a requirement – I never saw an instance where students were required to reply to teachers or interact with teachers about classwork. Access to a smartphone in this case was not required, but was a bonus that could help a student stay on track and remember to manage tasks outside the school day. In this way, many teachers expected parents not to infringe on class time, but did not mind invading a student's family, work, or activity time outside of class.

When I initially began recruiting students for interviews, I saw how much these sorts of reminders were relied on by students. Since much of my population was younger than 18 years, parental permission forms had to be signed and returned to me before interviews. Students were constantly forgetting to bring their permission forms back to me, leading to cancelled and rescheduled interviews, until Principal Jackson suggested I try using the group chat application, Remind, frequently used by teachers (since students rarely checked their email). Once I was able to send reminders to students outside of school the process become much easier[9].

[9] There was an additional learning curve to in-application chatting with students that I learned along the way. Initially I would send students messages around 8pm, when I figured they would have returned home from any after school activities and finished eating dinner. These were often unanswered or answered at a significant delay (sometimes in the middle of the night). After interviewing and chatting with many students, I realized they would regularly start their homework after 10pm, which they would then work on until after midnight. I also knew they used their phones a lot during this time to chat with friends and distract themselves. So, I started messaging them right before I went to bed each night with reminders, which would almost always result in an immediate response. Seven AM, right before I estimated they would leave home for the school day was another good time for this, but I assumed it was probably a more hectic time for both students and parents to be managing permission forms while getting themselves out the door for the day.

Many teachers doubled as coaches or faculty leaders of West City High School sports teams or extracurricular activities and needed to communicate with their students during the school day or in the evenings. Teachers I talked to who did this double-duty told me how they would communicate with their team or club members via smartphone apps. Often these messages contained information about where after-school practices would be held, game/event cancellations, and general reminders. This kind of in-house communication could be disruptive during and after school hours. This meant it was also possible that the distractions a student received during a school day were from other school officials. During the spring of 2018, Jill, a white senior, told me how the faculty sponsor in charge of Theater used an app to communicate with club members about where their rehearsals would take place. While we sat together outside the cafeteria during her lunch period, she explained that the location was often changing and without checking the app she would not know where to go each day. She told me she did not know of any students in the theater department who did not have smartphones or who would not be able to get access to these updates from their phones. But after I started using one of these apps for my own research, I realized the app would not work without a data connection. Whenever I tried to check the app as I was connected to the West City High School Wi-Fi the app would not load based on Wi-Fi restrictions. Any time I wanted to check in with students about interview times or permissions forms from campus, I had to disconnect my phone from the school Wi-Fi and rely on my data connection to do so. This could be confusing for a student, in addition to relying on students having access to a resource not provided, or paid for, by the school. Thus, connectivity via smartphones and Chromebooks was simultaneously distracting, helpful, and in-conflict with a student's school day, all without giving a student much agency over making these decisions for themselves, about an object that was in their personal

possession. In addition to being able to call forth students' personal devices for classroom use, teachers also relied on these devices to help keep students disciplined in their classrooms. I will discuss this further in chapter three.

Students and digital role competition

When teachers and administrators discussed the negative impacts of smartphones and connected technology infiltrating the school, it was almost always in regards to their teenage students. Often students used technology in the same ways and for the same reasons as teachers. Students, who were balancing their roles as students, children, employees, and/or athletes were also looking for ways to ease burdens and manage responsibilities, as well as remain accountable to others' expectations of them. And just like teachers, they also used their phones to goof off and could become easily distracted by the devices. Yet, because they were susceptible to the rules created for them by the school, they were subject to what was often paternalistic considerations of their needs and desires. Just as teachers benefitted from students having access to smartphones, so did the students themselves.

Students use smartphones for personal and school use

Students had lives that were complicated and full of demands, just like teachers. They juggled personal responsibilities on top of academic responsibilities and accessibility via smartphones helped them manage these demands, again, just like teachers. Dhiren had a job at a local sandwich shop that had an expectation that employees be available outside the workplace via the GroupMe app. This meant Dhiren needed to be accountable to his role as an employee at the same time that he was accountable to other roles, an expectation that would have been

challenging if he was not carrying around an iPhone all day. It also meant that at any moment during the school day he could be asked to change his focus and accountability from a notification on his iPhone. A workplace message could distract him from the school task he was working on and require him to switch course momentarily into thinking of himself as an employee rather than a student. He explained his manager's expectations for employees to stay connected and updated:

> For work, our managers set it up. So we use it for, you know, like if we need to have shifts changed or if I need to request a couple of days off or whatever. Then everyone gets a message and then you can also see, there's a calendar tool and we can see what events are coming up and stuff like that.

Other students used their phones when they felt they needed a break from the day. Natalie, a white junior, told me about her after school involvement with the West City High School theater club. During periods of the year when the theater department was rehearsing a play or musical, Natalie would be at WCHS from the start of the school day at 7:30am until late into the evening. During these long days, Natalie never felt like she got a break or got to socialize, so she would work breaks and socialization into her day, specifically during her math class. During her math class she might catch up on social media, as well as any digital correspondence on which she was behind. Natalie explained to me that her math class used a flipped model, which meant students were assigned video lectures to watch outside of class. Class time was then used for students to ask questions about concepts covered in the lectures or to do worksheets covering the previous night's lecture content. As she said:

> With the musical, I've learned how to time manage really well. I'm sort of behind, but I had this system where I'm going to catch up tonight, actually. So during class, I use math as my break since there's nothing due at the end of class. I'm not technically supposed to do that, but I like that better because it's a break. Because then right after school until about seven I'm running around working. Sometimes I get behind on my homework, but this makes me less stressed.

Math fell in the middle of Natalie's day, and since there was no lecture to listen to and class worksheets were not due at the end of class, she created a self-imposed break for herself to catch up on most days. Without this self-imposed break, Natalie could be at school for twelve hours or more without a break in her day.

Students adapt to varying expectations for classroom technology management

Because teachers differed in their rules for smartphone usage, students had to learn where and when use was permissible. For students, managing conflicting role expectations meant constantly adapting to rules around smartphone use dictated by teachers. While properly navigating classroom rules and expectations about phone use generally produced positive implications for students' in-class experiences, the fact that many students were juggling classroom expectations with competing demands from their lives outside the classroom complicated this process. If, for instance, a student's grandma was in the hospital, the example previously given by Ms. Anderson, they might be checking in with family members to get updates throughout the day. It makes a difference that in some classes a student could pick up their phone at each vibration to check on an update, whereas in other classes a student might be able to hear their phone vibrating from a cubby or their backpack, and be unable to see what messages they were receiving. In cases like this, where the phone was placed out of sight because of its perception as a distraction, new (and often unseen) distractions could arise as a consequence of being disconnected and uninformed.

Knowing when and where they could use their phones was a significant part of how students managed competing role expectations. This management had to do with keeping track of the communication and notifications they received on their phones, while also working around

classroom rules and the demands of their days. These strategies reflected competing classroom rules, self-imposed rules for managing distractions, and self-imposed break times. Managing the competition and conflict between the roles students were expected to perform meant they adapted to rules imposed by teachers and self-imposed rules to stave off conflict as much as they could. Generally the rules students created for themselves revolved around, what they perceived to be, the varying difficulty of their class schedules. Students were typically comfortable using their phones during classes they perceived as easy and created management strategies, such as putting their phones away in backpacks, during classes they perceived as difficult.

Students figured out what classes they were able to use their phones in from teachers who made their rules clear, but also by observing and challenging classroom rules. Luke, a white senior, explained how he figured out in which classes he could use his phone:

> LUKE: It kind of depends on the teacher. There are some teachers who just let you get away with it or like when you have a [substitute teacher] it's easy to be on your phone a lot.
> SARAH: And what's the difference between a teacher who lets you get away with it and a teacher who doesn't?
> LUKE: It's like if they're chill or not. They always say no, but then I don't know, you try it one time, then they don't say anything. You're just like, 'Oh well, okay.' And then you see other people doing that. Each semester is a little bit of a reassessment. It takes about a week to figure out if you can get away with it with a new teacher.

Students created workarounds, often with the aid of technology, for accessing their devices as they pleased. Just as Luke mentioned above, students learned which teachers were strict or not on phone use in the classroom. They also learned where in the building their phones would get decent reception. The latter, for instance, led to an overhaul of the cafeteria space. The cafeteria at West City was a large circular room in the center of the high school. There were three doorways a student could use to enter or exit the cafeteria. With cinder block walls, no windows, and two stories of classrooms stacked on top, anyone attempting to use cellular data

while eating lunch in the cafeteria was unsuccessful. This led to students hanging out in the hallways around the cafeteria during lunch time. West City High School, rather than enforce punitive measures for students lingering in the hallways during lunch periods, restructured the area around the cafeteria into an overflow for students, installing cafeteria tables and trash bins. When Principal Jackson gave me an initial tour of the school, he explained this change to me. The results of decisions like this showed that West City High School was sometimes interested in finding ways to adapt to changes within the student body, rather than enforce standards that no longer worked for them.

On a more minute level, students had to negotiate smartphone usage on a class-by-class basis, even with teachers who generally allowed smartphone use. Teachers who had lax smartphone policies could still have class periods where their tolerance for phones in class was lower or nonexistent. Teachers and students both mentioned that days when teachers lectured were not good days for a student to access their smartphone during class. Some teachers specifically requested students put their phones away during this time. Regardless if a teacher vocalized this sudden change in classroom expectations, students knew that teachers who had more laidback smartphone rules would not appreciate their use during lecture periods. Additionally, sometimes a teacher's mood would regulate smartphone usage. If a teacher was in a bad mood, she could decide on a whim that students could not use their phones in her class that day. If a teacher's usual policy was to allow students to use their phones, they were unable to argue that a switch in rules was unfair since teachers determined the rules of the classroom. In these instances students typically created their own workarounds to access their phones if they desired. I often ran into whole clusters of students in bathrooms during class time, who would often clarify if I was a student or teacher when I walked in. Students who were not afforded

opportunities to socialize digitally during class time instead messaged their friends and determined a bathroom or stairwell to meet in during class time. Once the school found this out, they started stationing teachers at desks in the hallway during their planning periods to check students for passes and catch students traveling in packs.

Upperclassmen were generally more used to using their phones during the school day. For freshman, who often came to West City High School from junior highs with zero tolerance policies, this was an adjustment. Initially I noticed Ms. Furly's freshman students never had their phones out. Early in the school year, during what Ms. Furly deemed a high-stress week where students were working on projects and ramping up for a test, she suggested students pull out their phones and listen to music while working. Ms. Furly said to students, "This is a stressful week. I want to make sure you get a minute to relax. Why don't you take your phones out and listen to some music while you work today?" The students hesitated and she reiterated her suggestion before they began unzipping their backpacks and grabbing their phones and headphones out. As the school year progressed, I saw more and more of the freshman keep their phones on their desktops, just like their junior and senior peers. When I asked Chloe, a white junior, where she kept her phone during the day, she said her desktop, despite only really checking it during passing period. Asked why she kept it on her desk if she refrained from looking at it she said, "I guess that's been a habit since I first came here. I kind of saw the upperclassmen doing it, so I thought that would be O.K." Within West City High School, students looked to their teachers and their peers to set the standard for how they should manage their smartphone usage during the day.

In addition to classroom and teacher-specific rules, students also assessed class difficulty to manage when they would use their phones. When a student believed a class was easy or

required low-effort, they felt more comfortable using their phone. Students who took Advanced Placement (AP) classes often mentioned keeping their phones in backpacks during these classes. Math, regardless of the specific class, was also noted as a period during which students generally put their phones away. Charlotte, a white junior, told me about how she scheduled her smartphone usage around the classes she perceived as difficult:

> I have a couple easy classes in the morning. I don't even use my brain until the afternoon. So my morning is pretty simple, which is good because I wake up and I'm always exhausted and I have lunch and I have a choir period where sometimes I have to go for an hour and a half. And afterward I go to psych [psychology class]. Um, and then I have Pre-Calc [precalculus] and AP English. So I end my day like, pretty difficult. So usually I put my phone in my bag after lunch and it pretty much stays there until the bell rings, and then I'll take it out to check it. I find it better to just put it away and not even think about it, so I can focus on what's actually happening.

Because Charlotte felt her school day became increasingly difficult, she limited her phone use to the part of her day she viewed as easier. Charlotte later told me that the temptation to respond to messages and notifications on her phone was too great if it was sitting on her desk. Therefore, placing her phone in her backpack during difficult classes helped ensure she would not be tempted to respond or engage with it.

Students benefit from (and are distracted by) having smartphones

Just as teachers could be distracted by the pulls for their attention from their smartphones, so could students. The students with whom I spoke juggled complicated lives and responsibilities and being constantly accessible to, and constantly able to access, others helped them stay organized. They also attempted to manage boredom and social expectations. Charlotte, a white high school junior, described how her smartphone helped her manage her family life:

> I check my phone during passing periods at school. I check it because my mom usually texts me a lot and so does my dad. My parents are divorced so it's like we communicate

> nonstop because I don't live with just one parent. Like, I switch pretty much every two to three days. So we're always talking about like who's going where, who's doing this because I have a brother, too, and I don't have a car and both my parents work nine to five jobs.

Charlotte's experience of texting her parents between classes was similar to many other students and teachers with whom I spoke. Charlotte could easily reach her parents if she needed to, but they could also reach her. In her above quote she mentions that she checked her phone to manage schedules, but also because she was responding to texts from both of her parents. Technology gave Charlotte and her parents accessibility to each other when they needed it. Since Charlotte and her brother moved back and forth between parents, technology was especially important in their lives; they were able to stay connected to each other digitally in place of being connected physically. If Charlotte, who was active in multiple choir groups at West City High School, suddenly needed to stay later than expected for rehearsal, she could text her parents to update them on her schedule and arrange a new pick-up time. Thus, during the school day Charlotte would shift roles often between being a student and being a daughter. Similarly, Charlotte's parents were able to use technology to manage pick-up schedules for their children while they were at work, navigating their own competing roles of parents, ex-partners, and employees.

No matter how a student attempted to self-manage their smartphone use, or how their teachers required them to, they could still be easily distracted by their phones. Regardless if a notification was an important message from a parent or an excuse to goof off with a friend, the "ping!" or vibrations that alerted a student to a notification was distracting. Even when kept in backpacks, students could still hear phones vibrating when they received messages or notifications. It was common practice that students would place their phones on chalkboard or whiteboard ledges at the front of classrooms whenever they took exams, leading to a quiet orchestra of vibrations during the class period. As an observer I never placed my own phone on

the ledges, but the constant vibrations would still make me anxious, as though I was also missing messages. Just as attendees at a party will parse out conversations in which they hear their own name mentioned (Moray 1959), so too do smartphone users recognize the sounds of their technology (Roye et al. 2010). Students mentioned during interviews that even when phones were required to be put away during class, they often put them someplace where they were able to feel the phone's vibrations, which would remind them to check their phone during passing period. Thus, even when a phone was put away, students could still be distracted by it.

Social media as a venue for role competition

The push and pull of role expectations through digital mediums could also be found in social media, where students were living out their social lives digitally. Friends expected semi-prompt responses and acknowledgement when they sent messages or posted images and videos online. Teenagers are highly social, yet often with much less freedom than adults. With days largely dictated by the adults in their lives – parents, teachers, coaches, etc. – they would generally find ways to be social on their own terms, which is where social media came in to play, offering expanded opportunities for socialization when teenagers could not be physically together (boyd 2014). Thus, social media provided an additional venue in which varying expectations of students were in direct competition.

I asked students about their social media use during encounters and interviews. Initially I wanted to know how students were keeping in touch with each other when they were not together. Students told me about various niche websites that addressed interests specific to them and their friends, as well as more popular apps and websites that consumed a large market share

of the technology industry (for instance Facebook, Instagram, and Snapchat[10]). Students varied in how much they used these applications – some students believed they used them too much, while others forgot they had them until a friend asked them to look at an online post. Students also had varying strategies for how they used social media applications. For instance, it was common for students to have multiple Instagram accounts. Most students I talked with had two accounts: a "normal" account and a "Finsta[11]" or "fake Instagram" (Duffy and Chan 2019). With these two accounts, students attempted to control their social presence online from what Marcwick and boyd (2011) referred to as "context collapse" or, the idea that users were presenting to a large and varied audience when they used social media. When a student posts a picture on Instagram, for instance, not only will their friends see this picture, but family members, teachers, coaches, college admissions counselors, future employers and strangers may also see it. Thus, by having multiple accounts, students attempted to control their social media content and who saw it. Asked what the difference was between each account, most students would tell me something similar to what Anushka, an Indian high school junior told me during the spring of 2018 about her normal account:

> My normal account is like nice pictures. And that's where I follow everyone from school, like everyone I know. Some of my family members follow it, so it's like for everyone kind of. I would post pictures if me and my friends went out to dinner and we took a really nice picture. We would post that. But nothing really random and I don't post much. Like every few months. I just keep it updated because I feel like everyone has one and now if you don't have one it's weird

For high school students at West City High School, their normal Instagram account was full of highly curated pictures they felt would be appealing to a large and varied audience. Students told

[10] At the beginning of my research Vine was an especially popular platform, but shut down while I was in the field. TikTok, similarly, was just gaining traction and the students I spoke with were generally unengaged with it.
[11] This is sometimes referred to as a "Rinsta" (real Instagram) and "Finsta" (fake Instagram). Normal vs. Finsta was how every student with whom I talked at WCHS referred to their accounts, so I will follow their lead here.

me they usually posted pictures from Homecoming, big events, or family pictures around the holidays. But generally these pictures needed to look nice and were often posed.

A Finsta account, on the other hand, was much less curated and planned. Pictures were often taken on the fly. It was where students felt comfortable stating opinions, feelings, and, as they often said, ranting. Jessa, a white high school junior, described her Finsta in this way:

> On my normal account it's more refined pictures. Normal pictures. But then my Finstas are all posts of funny or weird stuff that happens to me or like, if I have a thought I want to share, I'll post it there. And it's more like where people just post what they're feeling, not as much like what they want to portray. It's more just like what they're actually thinking or feeling.

As Jessa stated, a Finsta was an account where students could feel less guarded and not like they needed to craft a brand for themselves. In some cases, "normal" accounts were private, restricted to followers to whom the account holder gave access, though often they were publicly accessible accounts. "Finstas", on the other hand, were always private. Normal accounts could have upwards of 500 followers; most students told me they had around 800 followers, whereas Finstas were limited to 30-50 followers the account holder believed to be their closest friends. The idea here being that a student could rant about their feelings, and perhaps other students, or post pictures of themselves they felt were less flattering or more risqué, within a safe space of close-friend followers. This, of course, was an imperfect strategy, and students were often trying to weed out who the "snake" was when a Finsta post was leaked, as Charlotte described to me:

> Like if I posted something and said, like, 'Oh my God, Emily is annoying me' or something, and then somebody goes and tells Emily, I have to figure out who the snake is. And then they get shamed for being a snake. It's kind of just this unspoken rule. If you're following, you just kind of view it and don't tell the person it's about. That kind of stuff. It's kind of messed up really.

A student who was a snake and leaked information might do so to share something that was posted negatively about another student. But just as easily they might share a vulnerable post the account holder published to make fun of, or embarrass them.

Throughout these conversations with students about how they managed their online social presences, I found there to be a hard division between how athletes who were young women and other students (including young men who were athletes and all non-athlete students) managed their online presence. When asked if they were concerned about their social media presence, Luke's response summarized a typical student reaction, "No. Not really". Every student, athlete or not, recognized to some extent that the things they posted could be taken out of context and hurt them, or other people. Most students said they tried to be thoughtful about how they managed their online profiles so that content would not be damaging if taken out of context. However, young women who were athletes took this management a step further by not only managing their own accounts, but the accounts of their friends and other people posting pictures of, or including, them. These young women often preferred to use social media to "lurk" (looking at other people's posts), rather than posting much of their own original content. They explained this as having twin purposes: if they were caught posting something, or featured in someone else's picture, that was then deemed inappropriate by the school, they could be kicked off their West City High School team and also lose future recruiting opportunities for college. Nearly every student I talked to had plans to continue their education after high school in some fashion, be it through a trade school, community college, or four year university. Meaning, without athletic status, there were still future opportunities a student could miss out on if college or work recruiters saw something online they felt represented the student poorly. It was only young women athletes who were significantly less willing to take any chances on anyone's

misinterpretation of content posted on social media. It appeared that no matter where they were – on campus or off – or what time – during the school day or not – social media made them always accountable to their role as "athlete".

As I repeatedly heard these stories of online self-management from young women athletes, I asked them where they had learned this. Did the school tell them? Did older peers who had already gone through the recruiting process tell them? For many it was a combination of multiple influences. Some girls had parents who helped them manage their online presence as athletes who desired to play at a collegiate level. Some girls had coaches who brought in college recruiters to talk to the team about what they would be looking for. Other girls played for a traveling team as well as a West City High School team and heard horror stories from current and former teammates.

What these young women athletes considered when they managed their online presence was their involvement with illegal activities, such as drinking underage or using drugs, and how they were portrayed. All athletes managed their online presence so that they did not appear in pictures with visible alcohol containers, cigarettes, or drugs. Every athlete, regardless of their gender, had a story about a teammate getting into trouble for being in a picture online that depicted them drinking or smoking. They also learned to display "good girl" personas, which included being demure, polite, not sexy, and not too politically active. Sofia, a white high school senior, told me about a college recruiter her club soccer coach brought in to meet with the team to talk about the recruitment process. As she told me:

> SOFIA: And there was a college coach there and he said, 'We don't accept girls who post selfies three times in a row'. He's like, 'Cause that looks egocentric.'
> SARAH: What if they're great players?
> SOFIA: I'm like, 'What?!' But that's like your Instagram page. It's about you, so you want to be on it. It was a guy. Yeah, it was a *guy*. I don't even remember what college it was, and I'm like, 'What!?'

Similarly, Athena, a biracial high school junior, told me about how she was sometimes worried stating her political opinions online might impact how recruiters viewed her:

> I'm real political. I have a lot of very strong views and sometimes I'm afraid that if I retweet or I "like" something political that'll prevent me from getting whatever, because maybe it was too aggressive. So in that sense I think it's annoying that I have to be more conscious. I'm happy that I'm more conscious about what I'm posting online because some people are just putting stuff out there and don't really realize how it's going to impact them even if they're not trying to get into college. Like in the job world.

Athena was conscious about being judged about the political opinions she posted online. Not only did she feel like she needed to manage the posts she was writing in her own words, but she worried about a recruiter seeing someone else's post that she had liked or retweeted. Athena's online participation put her roles as an athlete and a student with political opinions into competition. No recruiters had told any of the athletes I spoke with that their political opinions could get them into trouble, but Athena felt this risk nonetheless. She did not explicitly say that her identity as a biracial student required her to manage her online presence in a way that was different from her white peers, or that recruiters had informed her that posting her opinions on race would be problematic. Yet, with professional athletes like Colin Kaepernick, a biracial NFL player, coming under fire for publicly expressing racial and political opinions (ESPN.com 2016), to say that gender can impact how recruiters treat aspiring collegiate athletes, while race or ethnicity does not, seems like an oversight. Young woman athletes like Sofia and Athena, thus had an additional burden placed upon their online identities. Because these students were both top-performing athletes, they were expected to maintain a certain kind of identity for the benefit of sports recruiters to market themselves as certain kinds of young women. Depending on the audience viewing their profiles, Sofia and Athena could be judged not for their athletic abilities,

but instead as a self-centered young woman, or a young woman too motivated by her interest in political issues.

Some young women athletes told me it was suggested that they manufacture online content to make themselves more appealing to recruiters, as well. Megan, a white high school junior, told me she was encouraged to post pictures of herself performing community service, which was not something she was already doing, "I was at this soccer recruiting thing and they were talking about it … like, there's a lot of coaches, they want their team to look good. They like other schools to hear that all their team's involved in community service. That makes them look good. So they also want people that they can bring in."

Beyond college recruiting, there were social repercussions within the high school from how athletes managed their online presence. Megan went on to tell me about the profiles she had seen of her athletic peers who were young men. She said young men athletes at the high school would commonly post about their personal successes during games. She also said it was common for young men athletes to post their high school GPA or SAT scores in their social media profiles. Megan told me that she did not feel like she, or other young women athletes, could do this without social repercussions:

> Like when male athletes post things like, 'Oh, our season is in three months" or other big things. They'll post their grades and things for college. But when female athletes do that it's like, O.K. I feel like it's more acceptable for them [young men] to do it. Like people don't recognize females as being good at sports, or serious at sports. If a female would put her GPA or her SAT score in her bio, like a lot of guys do, people would be like, 'Oh, you're trying to show off.' A guy that's on the football team could get away with it because they'd be like, "Well, of course. He's recruiting for sports'.

Megan believed recruiters would not frown upon young women posting these things about themselves, but that socially her non-athlete peers would believe they were showing off. Young women athletes had to manage their online role expectations differently based on how recruiters

and coaches might view them, but they had to maintain the role expectations of their peers, as well. Thus, young women athletes had to police their behavior online to protect themselves from recruiters and coaches misinterpreting how they fulfilled the role expectations they felt as high school students, while also staying within the bounds of what their peers would expect of them. For young women who were high school athletes, presenting themselves online could be in conflict with the multiple roles they fulfilled.

Conclusion

Students and teachers at West City High School had to navigate competing role expectations that had access to them during the school day via their smartphones and laptops. During in-the-moment communication teachers and students were pushed and pulled in multiple directions by those not physically present with them, such as parents, bosses, coaches, spouses, and friends. While technology benefited and distracted students and teachers in similar ways, it was teachers who were able to create the rules for how students accessed their devices due to their official roles as authority figures within the high school. Social media also played an important role in how students balanced the commitments and expectations others had of them to their various roles.

Teachers personally and professionally benefitted from their access to smartphones and connected technology. They were able to manage their personal lives and remain connected to the expectations others had of them outside of the high school. Teachers also set the rules for technology use inside their classrooms. While some teachers recognized that students were using their smartphones to also fulfill expectations outside the high school, others believed students reasons for using technology were inherently disruptive or not as good as their own. Despite these varying beliefs, nearly every teacher I observed assumed students had access to technology

and would often consider it a classroom asset, able to be called forth when a teacher wanted them to use it. This assumption meant that even in classrooms where students were unable to use their smartphones on their own terms, they were expected to have them handy for classroom use, if requested. When the West City High School Wi-Fi blocked content a teacher wanted students to access, it was assumed students could look it up on their phones. During a science fair in the spring of 2019, I walked around the room, looking at student projects. Most students relied on their smartphones to help them through some part of the research process.

Students' smartphone use and connectivity were impacted similarly to teachers. Just as teachers used their smartphones to manage their lives and connect with those outside of the high school, so did students. Students kept in touch with parents, coaches, bosses, and friends through their phones. When they were out of school in the evenings, they were also accessible to their teachers through their smartphones. Yet because students were not in positions of power within the high school, they were at the mercy of their teachers who determined how and when they could use their phones in class. These rules for students varied between teachers and sometimes within individual classes. Just as teachers benefited from students being in possession of smartphones, so did students. In addition to being accessible to those outside the high school, they were also able to use their phones to supplement content that was blocked by the school's Wi-Fi or for resources suggested to them by their teachers. However, students were also easily distracted by their devices and those attempting to communicate with them during the school day.

Competing role expectations went beyond basic communication, as well. For students who used social media, which was nearly all of them, the way they portrayed themselves online was in constant conflict between the various parties observing their online personas. Every

student with an online social media account was accountable to their vast and varied followers list, which could contain parents, friends, family, and work colleagues. If a student posted a picture of themselves at a party their friends might find it appealing, while their family members might find it upsetting or surprising. For young women who were athletes these expectations were heightened. Not only were these young women expected not to have pictures of themselves participating in activities that were illegal for them as teenagers, but they were also expected to not be self-involved, to engage with harmless social causes, and to not boast about their accomplishments.

For teachers and students at West City High School, being available via connected devices to social networks, forced an accountability to people outside the high school during school days, and to people inside the high school when out of school. This accountability could ease post-school day burdens, but it could also be distracting and cumbersome. In addition to being reachable via messaging and other applications, teachers and students were also accountable to larger networks based on the information they, and others, were publishing about them via social networks, making it impossible for teachers and students to be self-contained within the school day.

CHAPTER 3: DIGITAL DEVICES AS DISCIPLINE DEVICES

In the spring of 2018 I had plans to shadow Isaac for the day. I normally waited for students outside one of their classes and then began following them to their next class. But this day I had gotten hung up chatting in the hallway with Principal Jackson and was late meeting Isaac. Isaac had gym during the hour I caught up with him, so I was not worried about it. The teacher and his class were generally casual, and I knew it would not be a problem for me to walk in mid-class and hoist myself up on the bleachers while students pelted volleyballs at each other.

I had sat in on this class a number of times, but had never before encountered Isaac's gym teacher, white woman in her late 40s. On this day I was sitting on the bleachers, dodging rogue volleyballs when she walked up to find out who I was, and introduced herself as Ms. Cunningham. I told her I was shadowing Isaac and she asked me what I was researching. After I told her I was interested in teenagers' use of technology, she told me she doubled as the girls' soccer coach and how much of an issue smartphones had become with her team. She told me how she took her soccer team on a trip during spring break every year, where she locks their phones up so they could focus on bonding and being in nature. Recently this practice had become an issue for her, with girls finding ways to sneak into the box to grab their phones. Even though students told her ahead of time that it was nice to have a break from their phones and social media while they were on the trip, they still always tried to break the lock and use their phones.

She also told me that managing boys in gym class had become easier since smart phones became prevalent. Before she had to put all the balls and hockey sticks and various other accessories away because students would be throwing things and climbing on equipment during passing periods and while they waited for class to start. Since they all started carrying phones,

however, they rarely messed with any of the equipment because they were now too involved with their phones, compelled by the updates their peers were posting, or posting updates of their own.

Shortly after having this conversation with the gym teacher, I realized I saw versions of this everywhere. Being new to the school and not having the opportunity to watch how students' habits and actions had changed along with the addition of smartphones, it was easy to miss before Ms. Cunningham put words to it. Teachers and administration often complained that students were easily distracted by their devices, but it was not until I talked to Ms. Cunningham that I heard how teachers benefitted from this distraction.

Technology both complicated and eased classroom burdens for teachers. Some forms of technology (i.e. smartphones and Chromebooks) actually helped teachers maintain classroom order – potentially to the detriment of students' learning and educational objectives. In a sense, they allowed for students to self-discipline, so that teachers had to discipline less. Other forms of technology (i.e. earbuds and AirPods) created situations where teachers actually needed to discipline more. While all of these technologies distracted students from learning/their education, teachers only problematized those they felt prevented them from being able to re-capture students' attention easily, as with AirPods. Additionally, students use of social media opened up the contexts in which the school had to police or discipline students, in both the physical classroom as well as their online/virtual environments. This context collapse, discussed previously in Chapter 2, expanded the realms of a students' life that the school was now responsible for monitoring and disciplining.

In this chapter, I look at the ways in which smartphones, Chromebooks, AirPods, and social media were used by peers and adults to regulate high school students' classroom behavior.

When it comes to their smartphones, my argument here is not that teenagers are addicted to their screens, but rather that they are receiving positive reinforcement in the classroom for quietly using these devices – even if they are technically violating classroom policies on smartphone use. At West City High School students who were bored within the classroom rarely bothered those around them, and instead dove into the social worlds and games available on their smartphones and school laptops. This led to bored students appearing to be working diligently, when in fact they may have been occupied with other activities available on their devices. Sending Snapchat messages back and forth is not what students were supposed to be doing during class time, but because this activity was quiet and not disruptive, it helped teachers to view their students as docile workers, or at least as not distracting others. Sometimes teachers were not aware that students were distracted from learning by their devices, but when teachers did see students engaging in activities outside of those assigned for class, they did not always reprimand students or tell them to work on classwork. In this way students were rewarded by teachers for finding quiet tasks that distracted them from doing their work. I came to refer to this permission from teachers as "digital pacification", a play on the term "passive noncompliance" used by Demerath (2009). Passive noncompliance was the term used by Gene Foster, one of the teachers interviewed by Demerath, to describe students who were not engaged in class, but also were not disrupting class. As another teacher at Demerath's field site discussed it, "They're not outwardly being disruptive, but they're not doing what I, as a teacher, would hope or expect them to do." (2009:158). In Demerath's study, students' opportunities for passive noncompliance were relatively limited compared to what I found between 2017 and 2019 For the teachers Demerath spoke to, passive noncompliance was frustrating, but ultimately non-disruptive, (e.g. students distracting each other and outwardly proclaiming they intended to fail tests or not

complete their homework). Teachers preferred students who complied with their lesson plans, but were at least grateful that these students did not monopolize their class time by distracting their peers. With the addition of technology into the classroom, I update this idea to focus on the technology students and teachers used to create a sense of compliance in the classroom.

Digital pacification, as I observed it, occurred when faculty relied on students' use of technology to maintain the order of the classroom through self-inflicted discipline. It describes how students' bodies are less disruptive within the bounds of the classroom when they are using technology because they were sucked into and delighted by the virtual worlds in which they participated. This is a shift from pre-technology classrooms. This was possible because a student playing and a student working on a laptop look very similar. Through digital pacification, students appeared to as though they were following rules: students were quieter within classrooms and the school because they were so tuned into their personal technology. And while teachers would state that classroom rules were to work on class assignments during free time, ultimately the rule students learned to follow was to create the appearance of working on assignments. For example, rather than whispering to a peer sitting nearby, they could now Snapchat or send a text message.

When discussing digital devices and discipline, it is necessary to also discuss earbuds and AirPods, Apple's wireless earbuds. Earbuds were an issue the entire time I was in the field; teachers perceived them to be a significant disruption to class time, and I was able to observe the rise of AirPods among high school students across my fieldwork. Toward the end of my time at WCHS teachers would constantly ask if I was also studying AirPods, which they believed to be the biggest issue they were facing as teachers at the time. While teachers were able to see the ways students were positively benefitting from possessing Chromebooks and smartphones, they

were nearly uniform in their belief that AirPods were the most frustrating of all devices students had access to. Thus, while AirPods were not used by teachers as objects of digital pacification, they were heavily impacting their roles as disciplinarians.

Finally, social media, and the repercussions students experienced because of what they, and others, posted online, is also important to discuss. While the pacification of devices kept students disciplined *in situ*, social media worked as an additional venue for student discipline, creating a digital paper trail that followed students into the school. When students posted content online, no matter when or where the activity occurred, they could be accountable to these activities at school. In Chapter 2 I briefly touched on how a student's online activities can infiltrate their experience at West City. What is also important to consider is how students can be disciplined for content posted online, even if they were not the one to post it. Just as I discussed in Chapter 2, athletes are often on the hook for activities more than non-athletes because their roles as student athletes are considered representative of the school within the community as a whole.

Technology devices as disciplinary devices

As discussed in Chapter 2, teachers and students can use technology to ease organizational and logistical burdens for themselves. Technology can provide shortcuts that help cut time on administrative tasks such as grading and lessen the physical loads of students as they move between school, activities, and home. Teachers also benefitted from technology in its ability to distract students in a way that was generally non-disruptive to the learning of other students. Teachers told me that what a disruptive student looked like now, versus what a disruptive student looked like before smartphones, was completely different. Before

smartphones, students were physically disruptive, talking during class and horsing around with other students. In some cases a student preoccupied with their smartphone was a benefit to the larger class, because they were quiet and sitting still. Students, similarly, benefitted from the fact that goofing off on their technology looked a lot like working and provided a means of entertainment when they were bored. Where teachers did feel the greatest frustration with technology disruptions was with earbuds and AirPods, the audio devices with which students listened to music.

Technology eases teachers' burdens by regulating students' bodies

On days I shadowed Haley, I often encountered silent students plugged into their phones during downtime. Haley took an advanced art class with five other students every afternoon. They were all students who had previously learned the fundamentals of drawing and painting and this was a class where they could work on projects independently. Rather than lecture or provide students lessons, Ms. Blazey, a white teacher in her early 30s, would instead fluctuate between sitting at her desk and walking around to offer advice on the various projects students were working on. Students were free to talk, but most chose instead to listen to music while they worked rather than engage with each other. It was often so uncomfortably quiet that Ms. Blazey would turn on her own music, blasting it through the classroom from her computer speakers. This classroom always felt like a strange space to be in, for me. Apparently it was for Ms. Blazey, as well, who repeatedly took to asking students why they were so quiet or if they wanted to choose what the class listened to, if they wanted to listen to music that appealed to them (instead of her playlists, which mostly consisted of early 2000s rock ballads and the Baha Men's "Who Let the Dogs Out"). I always expected the students to chat while they worked, asking each

other questions or commenting on the projects they were each working on. But rarely did the students ever engage in the class, preferring instead to tune into their phones. The few times I got a student to chat with me felt awkward because the room was so quiet that even whispers carried around the room. This is a unique case of AirPods being permitted and non-disruptive, which I will elaborate on shortly.

Teachers told me repeatedly how different their classrooms were now that students had smartphones: passing periods between classes used to be loud and rambunctious. As students plopped into desks and waited for class to start, they would chat loudly with those around them. Students would leave their assigned desks to talk to their peers across the room and teachers had to wrangle them back into their assigned seats when the bell rang indicating class was starting. But once students had smartphones, passing periods became quiet. Teachers told me how, when they ended classes a few minutes before the bell rang, students previously erupted into conversation while they waited. During my fieldwork students had already been in possession of smartphones for several years, but teachers did not yet seem used to it. When a teacher took advantage of a passing period to use the restroom or fill up a water bottle, they would often come back into the classroom and ask aloud, “Why is it so quiet in here?” Most students, rather than talking to each other, instead peered into the screens of their phones, catching up with peers who were not physically with them via texts or social media. This new arrangement, which was sometimes eerie in its silence, ultimately assisted with classroom order. If the bell rang announcing class time and students were quiet and in their seats, this was less time a teacher has to expend getting her students under control.

Instances such as this often occurred when students were either in spaces in which they had clear permission to use their phones, such as during class downtime or during school free

periods, or when teachers were unaware that students were using their phones. At least one student (but often more) in each class used their smartphone or their Chromebook to goof off. Sometimes teachers were aware students were doing this, which I will discuss in the next section, but other times they were not. Teachers often wanted to take advantage of class work periods to take care of their own responsibilities, so keeping students on task and off their devices could become frustrating. As Ms. Anderson said to me, "I find it to be extremely draining to patrol and extend my creative and empathic strengths to management and punitive nonsense that I don't care about." Most teachers echoed Ms. Anderson's thoughts and found it exhausting to monitor their students to such a degree. Sometimes a teacher wanted to just teach and not wonder if the student in the backrow was typing in an erratic way that meant he was playing a game on his computer, or just taking extra diligent notes. When goofing off or being distracted looks so much like work, it was easier for a teacher to assume they were working than to try to monitor each student's activity, especially when it was generally not disruptive to the rest of the class.

Technology keeps non-disruptive students on task

Technology could help maintain order in classrooms where there were monopolizing students. Sometimes a student, or small group of students, would disrupt a classroom by talking during class, shouting out answers, or generally trying to distract the teacher and/or other students. This could happen while a teacher was teaching or during downtime when students were expected to be quietly working. Just as smartphones calmed disruptive passing periods, they also helped minimize the control a disruptive student could have over a class, giving them something else to concentrate on.

One of the classes I regularly participated in was yearbook, which was an English elective at WCHS. Participating in yearbook gave me insight into all the academic and non-academic happenings around WCHS. Students generally believed this class was easy, so in addition to students who were interested in the editing process of the yearbook, there were also students who hoped it would function as a free period for them, and sometimes their friends, at the end of the day. This belief led a small cluster of boys from the WCHS football team to join the class during the 2017-18 school year. I often referred to these boys in my notes as the "football boys" because they were inseparable in the classroom, goofed off together during class time, and were often seen together in the hallways throughout the day. This group consisted of three boys, two white twin brothers, Ethan and Kyle, and Lucian, who was black. Often they performed minimal work, never volunteering for more than they had to, and shirking responsibilities when yearbook tasks were divvied up to groups of students teams. Most days they would put in 10-15 minutes of work before turning to their iPhones to watch music videos, play games, or noodle around social media. Watching the other students in the class working diligently on their class assignments and projects, I spent months trying to figure out how these three boys were able to spend so much class time on their phones. My conversation with the gym teacher helped me realize this "permission" helped maintain classroom order.

Sitting across the room from the football boys was a table of athletic and popular girls: Tamara, who played on the basketball team, Christine, who was on the softball team, and two cheerleaders, Kay and Danica. When Ethan, Kyle, and Lucian were not allowed to be on their phones, which was rare, they would migrate over to the girls' table, finding ways to distract them. The boys would throw things, shout at them across the room, or physically distract them by messing with their hair or clothes. The girls, who were not the most diligent students in

yearbook but kept a steady work pace, would get distracted by the boys, either because they engaged with their teasing or because they had to expend energy to convince the boys to leave them alone.

Whenever the football boys were not on their phones the two teachers in charge of yearbook would repeatedly ask them to sit down and stop disrupting other students. The teachers also had to keep an eye on them or the boys would attempt to leave the classroom before class was dismissed. When the boys' attention was turned to their phones, however, they would only be distracting to themselves. They stayed at the table they shared, looked at their own and each other's phones, and joked among themselves at a relatively low volume. While this could sometimes be distracting if their volume increased, it usually stayed within the group and did not migrate out to other yearbook students.

After one class that felt particularly frustrating to me, as an observer and not someone who was responsible for completing any work or maintaining order, I stayed after class to talk to Ms. Furly, one of the yearbook faculty sponsors. I was curious why the two faculty sponsors kept Ethan, Kyle, and Lucian together, rather than splitting them up across groups. She said they had discussed it before but believed the other groups of students were doing good work and they were afraid if they dispersed the boys through the class they would end up distracting the rest of the students. Instead, they preferred to keep the football boys together, where their activities were contained and did not disrupt other students.

A year later, when Ms. Furly and I sat down for a formal interview, these boys came up again in our conversation. Ms. Furly remembered this specific class period just as well as I had, asking me, "You remember how I yelled at them?" On that day, the boys had been disruptive and loud for the entire class period, constantly asking Ms. Furly irritating questions they could have

easily found the answers to on their own. Students on yearbook were responsible for pictures and information on the various student teams and clubs. These groups were divvied up amongst the yearbook staff, who were responsible for choosing the pictures that would be featured in each spread, as well as conducting short interviews with the coaches, leaders, and students who were involved to gather information. The two teachers who led yearbook mostly stayed on top of students and their communication with faculty sponsors and coaches. At the beginning of the year they provided short lessons on what these emails to faculty should look like and how to be clear communicators. Despite these lessons, the footballs boys would constantly ask questions about these messages: "What should the subject line be?" "What is the basketball coach's name? Or email address?" "Do you know when the next home game is?" "How should I respond to this email?" As class came to a close, they moved from their shared work table and stood by the door, bothering the students who sat closest to the door. It was a particularly busy day for the yearbook staff and the boys, taking advantage of everyone's concentration, slowly slipped out of the classroom, trying to leave before the bell rang. Ms. Furly, who appeared to be especially frustrated by their antics over the class period, yelled that if they did not come back into the classroom and be quiet, they would all receive detentions. During our interview I asked Ms. Furly again about how she attempted to manage them, and students like them, in the classroom. She said, "They're known for being bad[12]. Letting them use their cell phones instead of working is like permissive parenting. I do the same thing with my daughter when I need to brush her hair. 'Let's put on Mickey Mouse Clubhouse!' So she'll let me."

[12] These particular students were connected to a former student who had, the previous year (after he graduated), sexually assaulted a student, a young woman, filming it and posting it to Snapchat. A case I will cover later in the chapter.

In a similar capacity to parents of young children who might plop a tablet or smartphone in front of their kids at a restaurant to entertain them for the length of a meal, teachers at WCHS used technology to keep students from being distracting to others. After I identified it in the football boys I noticed that nearly every class had one or two students who were mentally checked out of a class – either because they did not enjoy or value the class, school as a whole, or were just bored that particular day.

In the rare classroom where students would chat and distract each other, rather than going for their devices, teachers would constantly tell students to be quiet and get back to work. Yet these teachers hardly ever walked around the classroom to look for proof that students were working once they got quiet. Instead teachers reprimanded students for being loud and continued along with whatever tasks they were working on at their own computers. Whatever led students to then be quiet – most often pulling out smartphones or playing games on their computers – was enough to suffice for work. Teachers were not looking for proof of work, but rather for the appearance that work was being done. And what looks more like a room of students diligently working on an online worksheet than 25 students sitting quietly, staring at laptop monitors?

Where in the past these students may have used their restlessness to bother and distract students around them, they could now collapse into their phones or the few games available to them on their Chromebooks. And while it might seem that phones were easy to hide under desks, and laptop screens could be faced away from teachers, I watched teachers gaze upon Tetris and Snapchat screens regularly with no reaction. There were times that teachers called students out for using technology in ways, or when, they were not supposed to, and times when teachers were too busy or distracted on their own to see evidence of every student diverted into technology. But there were also times when I saw teachers hone in on a student attempting to hide a smartphone

below their desktop, and then look away. When this happened, it was often with students I knew had a history of being disruptive in the classroom.

For students, goofing off fends off boredom while looking like work

In my first fall at West City High School I sat with three students, Haley, Isaac, and Tala, a Filipino junior, in a pod of desks nearly every day during fifth hour. Isaac, who was generally affable, energetic, and bored, brought the four of us together into a cohesive little group. Together we worked on projects, reacted to lessons, and goofed off. Isaac often came into the classroom with a video or song queued up on his phone for me to watch or listen to. Isaac's good nature brought our pod together and we often shared whatever snacks we could find in our bags. At one point before the end of the semester, as they geared up to change class schedules, Haley said, "I'm going to miss this group so much. This is the best part of my day."

One day in class students were supposed to write letters to be read at their funerals, as part of an assignment on aging. I watched Isaac open up a new document on his computer and begin typing. He did this for a few minutes before turning to me and asking, "Do you want to take a survey online that will tell you at what age you'll die?" Isaac pulled up the survey first, answering questions about his diet, if he drank or smoked, and other kinds of self-care questions. Isaac clicked "submit" on his answers and we waited to get his result … age 69. He then turned his Chromebook in my direction for me to fill out, while we wondered quietly out loud how accurate the results might be. As a quasi-experiment, Isaac decided to fill out the survey again, using the same answers. This second time his result was age 85. Before he turned back to his letter-writing task, we laughed about how the results were just algorithmic in nature and nothing we should take too seriously. This kind of goofing off with Isaac provided me with two major

insights into how students used their Chromebook outside of school-sanctioned ways. Before Chromebooks and smartphones, students goofed off in ways that were much more visible, which could often lead to trouble. But with the addition of new technology, students found new ways to cure boredom. Just as teachers used student tech consumption to their benefit, so did students. I argue here that students were trained to use their devices in this way. Without their phones the football boys, for instance, disrupted the entire class, but they were given unspoken permission to use their phones during class, as long as they stuck to themselves.

This was Isaac's senior year and early on he started suffering from a bad case of "senioritis". His schedule was filled with classes that he and his peers generally considered to be unchallenging and boring. Isaac because not plan to continue his education after high school, the classes he took were those that were required by the school. Whenever we talked about what he planned to do after high school, he told me about how he wanted to move to New York City to pursue a rap career. He was impatient to graduate and get there and he felt like high school was a waste of time in his last year. Because he took only those classes required of him, his schedule was truncated, giving him two less periods in a day than most of his peers. Isaac rarely engaged with the classwork his teachers gave him and instead filled his day with things to entertain himself – texting his girlfriend, listening to music, and finding games and other distractions online. Isaac offered me a glimpse at how technology could help occupy a student's time if they were not invested in all, or part, of the school.

Students realized early on that the Chromebooks offered a new way to goof off in class when they wanted to. In most classes it was normal for students to have their Chromebooks open on their desks. Some teachers would request that students close them and put them away during times they were clearly not needed, but students used them in most classes to participate in class

and take notes, so their presence was common. If a student was looking for a distraction during class, the Chromebook could help in two distinct ways: it could provide the means through which a student wasted time and it could work as a physical blockade to an alternative task (often playing on one's phone) the student preferred.

Students generally preferred to use their phones, rather than their Chromebooks, when they were looking for distractions, but phones were often too visible. Plenty of websites students were interested in were blocked from the school's Wi-Fi from the outset. However, if a website was blocked, this commonly just led a student to diving deeper into the internet to find a replacement for whatever they were looking for. Generally, most popular websites associated with teenagers or time-wasting (for instance: Buzzfeed, YouTube, and any social media) were blocked by the school. For students who preferred to play games, as more and more popular games were discovered and blocked by the school, students would find others to replace them. Similarly, a few students would open a new Google Document, share it with a friend, and use it like a chat room, typing back and forth to each other. Because all of these tasks involved using their Chromebooks, if a teacher were to glance around the classroom, it might look as if every student was diligently working. A student playing a game might look less convincing, rapidly hitting keys, perhaps physically jerking their bodies, but to a teacher who was not looking for distracted students, they would still be easy to miss.

Analogously, students also used their Chromebooks as physical barriers to hide the non-work tasks by which they were distracted. Teachers commonly talked to me about students texting on their smartphones from their laps, using their desktops to block the view of their phones. But an open laptop also gave them something to hide behind. When I sat at the back of classrooms I often saw students prop their smartphones up on their laptop monitors, making their

phones invisible unless a teacher was standing behind them. In this way students could follow along with conversations happening online by reading them, or use an index finger to type quick responses to messages, scroll through pictures, or generally control their devices. It was common for students to use this method to watch videos on their phones, as well. During professional sports seasons students would often have daytime games playing on their smartphones, while they were in class. Because watching these games or videos did not require them to interact with their devices, besides watching them, students could commonly go an entire class period watching a video without a teacher saying anything.

Regardless of the intensity of a student's schedule, or their interest in their education, the high school day could feel boring to them. One of the school's Vice Principals, after introducing himself a few months into my fieldwork, asked me, "Is it as bad as I sometimes worry? Are they really just sitting all day long?" I realized I had been thinking the same thing as I got re-accustomed to the logistics of being in high school again. So much of a student's day, and by association, mine, was spent sitting and waiting. Regardless of whether a student was interested in a class or not, they would still often have to sit for a few minutes waiting for the bell to ring once they arrived in class. And once it did, they often sat for several more minutes while the teacher took attendance and submitted it through the school's online system. There were almost always a few hiccups, often tech-related, teachers had to work through, as well. It was common for the internet or Google classroom to be down or unavailable, or the classroom projector unresponsive. Disciplinary and communication issues were also handled while students were in class, which often led to a school officer or messenger interrupting class to collect a student or drop off a note. When students were not reacting to, or waiting for these instances to pass, they were often required to sit quietly while a teacher lectured to them. For students with a full-day of

classes, this happened repeatedly, eight different times, until the school day ended. Even in the most interesting and entertaining class, there were still moments of boredom. Thus, students often found ways to keep themselves entertained and occupied.

AirPods: What teachers really hate

Teachers could generally find ways to work with, and around, students' smartphones and Chromebook distractions. What teachers had a tough time adapting to was students' near-constant use of earbuds and AirPods to listen to music. Whenever they had downtime it was common to see students listening to music while they walked between classes or worked on quiet projects in class. However, students also liked to listen to music during class time, when teachers expected them to participate in class. Further, I witnessed instances where their use was obviously detrimental to learning: Students commonly missed lessons/parts of class reviews because they were listening to music. And while the same happened with Chromebooks and smartphones, sometimes their distraction was due to outside responsibilities and not just pleasure, whereas AirPod use could never be explained as a competing role demand.

It was common for student teachers to be present within WVHS classrooms. Often these were students from neighboring universities who had to complete some amount of teaching hours as part of their degree program. Mr. Lopez was one such student teacher. Mr. Lopez covered the class one day while the normal teacher used the opportunity to take a lunch break. After lecturing to the class, Mr. Lopez gave students a mini quiz, asking students multiple choice questions and having them answer out loud, as a way to review the course content. Several students around me had AirPods in during the review, which students were encouraged to take notes on so they could use them to study later. As Mr. Lopez went over questions and answers,

the students around me kept missing what he was saying asking, “I missed number three, what was the answer to that one?” Mr. Lopez did not notice the students were distracted by whatever they were listening to, and instead repeated the question and answer, apologizing for moving too quickly. Because the students’ AirPods were well hidden by either their hair or they were only wearing one, it was easy for Mr. Lopez to miss, especially as a new teacher.

While I observed teachers who allowed students to goof off on their phones or Chromebooks during class, I never saw a teacher catch a student with earbuds in, except in instances where they were permitted, as with Ms. Blazey, without asking the student to remove them. Teachers sometimes recognized that they let students get away with using their phones during class, but they were in agreement that earbuds and AirPods during class time was annoying and disruptive. As Ms. Anderson told me during one conversation, “I’m less concerned with games on the computer and games on the phone than [I am] this year with AirPods and earbuds.” Ms. Anderson felt the distraction from AirPods was, “More powerful than the one [she] could see and observe; like a phone.” She worried that students used AirPods as a buffer between themselves and teachers, or whatever they may not have wanted to deal with. She also worried that students didn’t know what they were “Getting out of it” and that they were “Operating in a feel good, feel bad, feel good kind of way. So then what are they going to choose in this minute if they feel bad? Their AirPods, rather than stepping back and recognizing what their actual need might be.”

When students were initially using wired earbuds, they had to figure out how to keep the wire hidden during class time. Often they would only wear one of the earbuds, on the side of their head that faced away from the teacher. Though sometimes students would wear both in class if they were wearing a hoodie, which they would pull up over their ears, half up, to conceal

the wires coming out of their ears. This being an issue because, while students were allowed to wear hoodies in school, they were not allowed to wear the hoods up. This was often easy to catch because it required students to wear their clothes in a particular way to navigate around a chord. The issue of hiding earbuds with a hoodie was one that affected boys, and often boys of color, the most. Because girls often had the benefit of longer hair, which they could use to hide evidence of earbuds, they generally did not use clothing in the same way. Nearly every boy who I saw try to sneak the use of earbuds, did so by trying to cover them up with hoodies. However, multiple times I saw teachers ask white boys to put their hoodies down and take off their earbuds with no follow-through – not only did the boys fail to remove their earbuds, but the teacher also did not wait to see, or check back in to see, if they were actually removed. Whenever the same situation happened with boys of color, teachers almost always made sure to follow-through and treated it as a much more serious issue. During a faculty meeting in the spring of 2018, held in preparation for the National School Walkout, organized by students in response to the Marjory Stoneman Douglas school shooting in protest of gun violence, hoodies were an issue discussed by Principal Jackson. In addition to discussing logistics and security for the day, Principal Jackson mentioned that he could feel a "heightened angst" amongst the students. To address this "angst" and some additional concerns about conduct, the school was going to require teachers to spend their planning periods working at desks in the hallways so that students had fewer opportunities to gather in remote spots in the building. In addition to these measures, Principal Jackson mentioned the dress code, which I had observed to be relatively lax. He said that teachers needed to start cracking down on dress code violations, mentioning hats and hoodies specifically. Hoodies, he said, were "unfortunately a cultural issue" and that "African American males" were commonly seen with their hoods up. Thinking about hats and hoodies, I was

brought back to my initial visit to the school, almost exactly one year before this faculty meeting. During this visit, Principal Jackson had walked me around the school during passing periods, so that I could get a flavor for what various parts of the school looked like and the general conduct of students. I was there for several hours that day, and right before each passing period he would suggest we go stand at a different spot in the building to watch students. On our way to one such vantage point, we passed a student, a white boy, who was wearing a baseball hat. Principal Jackson called out to him by name, asking him to remove his hat and chuckled about repeatedly asking the student to remove his hat. The student laughed in return and removed his hat. I remembered this episode clearly because I had talked to a fellow graduate student about it that evening. At the time I recalled thinking how progressive it made the school seem. At my own high school, I remembered the principal being a rule enforcer at all costs. Students were treated as though every rule violation was a personal affront. With Principal Jackson I wondered what the big deal *was* with students wearing hats indoors and how interesting it was that he seemed to approach rules such as this in a more laid back nature than what I was used to. What did it really matter if a student was wearing their hat in school? Maybe the first instance, during my visit, was for my benefit – who wants to reprimand a student in front of a visitor? Or maybe it was because the student was white. Either way, juxtaposed with this conversation at the faculty meeting, I could not help but think this was an example of uneven disciplinary actions based on students' skin color (Ferguson 2001).

As technology progressed during my fieldwork, students began using Apple AirPods rather than generic earbuds. Where earbuds had a wire students had deal with, AirPods were small and wireless. During my second year of fieldwork it was rare to see a student with wired

headphones, especially once students returned to school in the new year with their gifts from the holidays. Ms. Anderson again summed up how students adapted to this switch:

> The thing that sucks about AirPods is that there's no wire. When it used to be a wire, it was really easy to see who had stuff in. It was really easy to see who was snaking them up their sleeves and just listening. Overall it's just a distraction factor. Kids are so distracted and so addicted to those, whatever they're getting from it. I almost find that the plugging in the earbuds and the music and checking out that way is the thing that's so much more distracting.

Almost every teacher I talked with had an opinion on students' use of AirPods during class time. Aside from being distracting, Ms. Anderson was often frustrated by AirPod use because she found it more difficult to catch. If she wanted to catch students on their phones, she could easily see students hiding them under tables. If she wanted to catch students playing games on their Chromebooks, she could see their erratic movements. AirPods, on the other hand, didn't engage an easily observable or suspicious body posture.

Teachers generally felt they understood a student's smartphone or Chromebook distraction, but AirPods, on the other hand, seemed to be especially infuriating because it did not make sense to teachers. If Snapchatting was like passing notes, then what was listening to AirPods akin to? A few teachers mentioned, especially with the advent of Apple's AirPods (which cost roughly $150 in the winter of 2020), they believed it was partially a status symbol issue. Whereas when students were using earbuds, they would mostly remove them at a teacher's request, with AirPods students would claim, when they were wearing them, that they were turned off. Teachers were clear to say that there was no way, besides listening for themselves, to know if students were telling the truth or not. But because of the change in student behavior between earbuds and AirPods, they believed students wanted to wear their AirPods even when they were not in use, as a social status marker, what Veblen (1994) referred to as "conspicuous

consumption" (Bourdieu 1984). As Mr. Ramirez said, "It just blew up and everyone has them [AirPods] now and it's like a status signal, in that sense. You know, it's like if you don't have it then you're not as cool". Teachers could give students the benefit of the doubt when it came to how they were using their smartphones, but, as Ms. Brown said, "Whereas AirPods it's like, you are clearly listening to music. Take it out."

The inclusion of technology into the classroom brought with it a complication of discipline. Where devices could be distracting, they could also ease teachers' burdens and keep checked-out students from distracting those who remained checked-in. Just as teachers benefited from technology as a teaching aid, they also benefitted from technology as a disciplinary aid. And while these devices could still be cause for frustration for teachers, the real issue many teachers cited for disciplinary issues, were students' use of earbuds and AirPods. Teachers recognized that smartphones and Chromebooks could provide students with benefits, but teachers never discussed the benefit of AirPods and instead found them distracting and annoying.

Regulation through social media

The day I met Ms. Cunningham, in the spring of 2018, she also told me about her issues with social media and students. After telling me about the boys in her gym class, she went on to tell me that she thought parents were just as bad as students. I asked why this was and she told me that parents with children at West City High School would look up students from other schools online to find content online to get them into trouble, and vice versa. These parents, she said, sent screen shots of students to sports coaches, the principal, and/or the school board in an attempt to get them kicked off teams or benched during games. As I asked her questions about this, she pulled out her phone and opened an email to illustrate this. As she scrolled through her

inbox she said, “I shouldn’t even be showing you this but …” and held out her phone for me to see. She showed me an email that contained two smartphone screen shots from two different social media accounts. One was a covert picture of a boy on an airplane that looked like the subject of the photo was unaware his picture was being taken. The post was created by a young woman who was a student at WCHS and the caption accompanying the picture informed readers that she had just given this boy, who she had met on the plane, a hand job during their flight. The second screenshot was a selfie of a different boy blowing smoke out of his mouth into the camera. Viewers could not see the source of the smoke, but the caption intentionally led readers to believe he was smoking marijuana.

Ms. Cunningham was frustrated for several reasons, she said. She was frustrated that students had made public posts with such sensitive content. She was frustrated at parents for trying to get the students in trouble when they were, after all, teenagers. And she was generally annoyed that she did not know if either of the posts were believable. Especially in the picture taken on the airplane, there was nothing in the picture indicating that the caption was truthful. While the student in the second picture wanted to give the impression of smoking pot, Ms. Cunningham also knew it could have been cigarette smoke or something else, since the source of the smoke was not photographed. Both of these students were athletes on West City High School teams, she informed me. Athletes, it seemed, as representatives of the high school, were once again the subjects of scrutiny because of their more public personas.

Teenagers’ relationships with social media varied in how much they viewed and interacted with it, but in my field site I did not meet any teenagers who did not have a social media presence of some sort, even if they were only using them to view other accounts, rather than posting their own content. Though some students deleted certain accounts or apps for

periods at a time to take a break for various reasons, it was never a permanent decision to disconnect. Especially for teenagers with demanding parents, who felt they were competing for limited resources or only had limited time to spend with friends, social media, and the devices they access it on, were important venues for keeping up with friends (boyd 2014).

Students were disciplined for their social media use when students' virtual worlds bleed into the school day. We already know that the content students, or anyone, post online does not exist in a private sphere – students are often held accountable for the content they post online (Lane 2019, Stuart 2019). What is unique about social media is that it leaves a sort of paper trail of student activities when they are posted online. And while WCHS students displayed an impressive knowledge about the extent of their privacy online, they would also sometimes take significant risks with the things they posted online. Students use of social media to document antics, made the need for discipline and who to discipline more clear cut. However, at West City High School, it was adults from outside the institution of the school that were intentionally using social media to create advantages for their own children at the expense of other students.

Where students felt repercussions for the content they posted online, they created similar digital footprints for their teachers. Teachers had a tendency to keep a low, and much more private, profile online. Students, however, used their abilities to create digital paper trails by documenting, what they saw, as the misdeeds of their teachers, often forcing them to be accountable to the same standards.

When teenagers post risky content

During the spring of 2018 I was hanging out with Tala one day who turned to me and said, "Did you hear about the student who pooped in the stairwell?" I had not, and she filled me

in. According to Tala, a student had taken multiple laxatives and then had a friend film him while he defecated in one of the school stairwells. The video was then posted to the schoolwide Snapchat story, where everyone could see it. This story followed me around during my time at West City. Multiple people brought it up whenever conversations about teenagers and social media came up. A year after the incident, Mr. Kieff also told me about it. I had asked him how social media use impacted his day, to which he responded, "I'm just aware of it. It's like you can tell when students have got something going on – where something's been posted online. It's just fascinating to see how fast information travels." He went on:

> One of my favorite days to talk about … I knew something was going on. It was like sixth hour. I walked in and you could just feel it. You're like, 'What's going on? What do you guys …?' And by this time it was kind of towards the end of the year, so they were being a little more honest. They're like, "Something happened. You might want to check the stairwell …"

Mr. Kieff, who coached the speech team, said that by the end of the day the video had spread all over. His speech students had reposted it within the club's GroupMe chat. Ms. Furly told me that it happened in a stairwell near one of her classes, leading her to believe the student did it directly after her class, since he was one of her students. The teachers who told me about it did so with a sense of humor.

Before social media, a student who pulled the same prank would have to rely on their in-person social network to keep it a secret. The more students gossiped about it, the more likely the pranker would get caught. But a student who records the act on social media is creating evidence and nearly handing it over to the school's administration. Because the video was posted on a schoolwide Snapchat story, any person who was tuned into the story had access to watching it.

In a different incident, a former student recorded himself sexually assaulting a girl who was a student at WCHS. In this particular event, which happened during my second year on

campus, the former student filmed, and posted to Snapchat, himself assaulting a young woman who was passed out. He covered the young woman with a series of kitchen condiments while she was unconscious. When he was finished, he deposited her, still unconscious, in the yard of a friend. The young man who perpetrated this crime was arrested. Later, when the young woman spoke out online about sexual assault, a fellow student, a white student named Brad, posted a response that contained pictures of a ketchup bottle, a mustard bottle, and a mayonnaise jar. This online conversation gathered attention from students and then teachers, one of whom made Principal Jackson aware. As Ms. Furly told me, there were no repercussions the school could have pursued for this student's actions[13] (i.e. suspension, detention, etc). So instead, Principal Jackson called the student's mom to inform her of what her son had posted online. This fell right in line with my expectations of Principal Jackson, who often displayed a low tolerance for negative actions and hurtful attitudes among his students and teachers.

The ease with which this kind of activity made its way to teachers and Principal Jackson surprised me considering how savvy students often seemed to be in regards to their online activities. As discussed previously, students attempted to manage their online profiles in several ways: they created multiple accounts with varying levels of access, they policed the content others posted about them, and in some circumstances they refrained from online activities entirely. These precautions were imperfect, of course. Even a student with a private account and few followers could have their content leaked. But in the two instances highlighted above, the content posted by these current and former students was posted to public internet channels. I would argue that the student who defecated in the stairwell intended to be caught, based on how publicly he posted his video, while the student who sent a harassing message to the survivor of a

[13] According to the West City High School student handbook, bullying of any variety (in-person or online) is considered an offense, though no specific punishments or consequences are listed out for it.

sexual assault perhaps thought less about what he was posting and if anyone would notice it. When students posted content online, they were well aware that it was publicly accessible (even if technically posted to a "private" account) and easily shared online, yet still often chose to risk whatever consequences might follow.

When teachers are the subject of risky content

Teachers often kept their social media presence, if they had one at all, incredibly buttoned up. Perhaps also because they were adults, their participation with social media was relatively limited. Often they were using platforms, such as Facebook, that students has less interest in, but even when they were on the same platforms, teachers told me they were not compelled to keep up with it. Whereas students told me they checked their various social media accounts several times throughout the day, teachers would sometimes check once a day, or once a week. However, teachers could still be held accountable on social media by students. Regardless if their actions occurred online or offline, students did not shy away from posting information online about their teachers. Sometimes this was in the name of fun, in which cases teachers often did not mind, but other times it was to hold teachers accountable to the acts they found inappropriate or unjust. Teachers rarely had their personal lives scrutinized the same way students did, but their lives at school, and their relationships with students, were often captured by students on social media. In this sense, social media made it easier for students to create a paper trail of teachers' misdeeds and to discipline them in their own way.

Mr. Ramirez, one of the Spanish teachers and the subject of students' online activity, typically greeted his students in the same way every class period. After students filtered in and the bell rang announcing the start of class, he would walk to the classroom door and close it

while shouting, “Hola! Hola! Hola!” One student found this humorous and over the course of an entire school year, filmed the daily greeting. At the end of the year, he compiled them together into one long video. Because content travels between and amongst students quickly, I saw the video before I ever met Mr. Ramirez. Building off the original filmer and poster, students turned the video into a meme, cracking mostly harmless jokes about his energy and good nature. Mr. Ramirez used this example when telling me about students filming teachers in class:

> Students randomly film teachers. Cause I know, I know that’s happened to me quite a bit. There’s actually a minute or a minute and 30 seconds of me because I kind of do a little intro every day. So I had a student record me I guess every day for the whole school year. And then he made little clippets of me just going, “Hola! Hola! Hola!” And it was just like one after another. And it was just him recording me every morning. So I see a lot of that, just kind of random recording of teachers.

Mr. Ramirez was unbothered by this activity. He never mentioned asking students to take the video down and no students got in trouble for creating or posting the content. But this example illustrates students’ general belief that the things happening around them were up for grabs in terms of being recorded and shared. The adults around them often speculated at what led students to be so comfortable posting personal, risky, or sensitive content online that could potentially incriminate them. We know the division between the virtual and physical world is not as bifurcated as previously believed (Duffy 2017, Meyrowitz 1986), and students challenged this idea in ways different from the adults around them. Where teachers and staff at WCHS told me that they refrained from online participation or stopped putting some of their online communications in digital writing, preferring instead to talk on the phone about sensitive topics, students displayed a belief in their ability to record and distribute such incidents. However, where teachers and adults used students’ online content, such as the social media screen shots mentioned above, as a means for punitive measures, students at WCHS instead limited their

activity to circulation amongst themselves. Thus, when incidents with adults occurred, students did not record it and submit it as evidence against adults, but instead posted it online and allowed the information to circulate on its own. When punitive measures were taken on something students had recorded and distributed, it was often because the information unintentionally made its way to an adult.

In the spring of 2018 I watched this process play out with a teacher, Mr. Givens. The Monday following prom I was spending the day with Haley. During Haley's lunch hour, her friends who had gone to prom told us about their experience at the dance and what they did afterward. Two of the girls at the lunch table had hickeys on their necks from their dates and talked about the teachers, always men, who had either already given them trouble about it, or who they felt certain were going to as they continued through their day. Emily, another girl at our table, mentioned a teacher she was uncomfortable about seeing, so a friend offered up a tube of make-up concealer, and Nick, a white senior, and I got to work helping her hide it as much as possible. At the mention of teachers giving girls trouble about having visible hickeys, a student laughed and mentioned Mr. Givens, I teacher I haven't yet met, and turns out, never would. I asked students what the deal was with Mr. Given and they told me that he had just been fired for inappropriate communication with a student.

Mr. Givens, a physics teacher, was also part of the drama department. Because of this role, he helped with the technology involved in play productions. According to the students at this lunch table, he had been using GroupMe to chat with a young woman who was part of the drama club. I asked the students what kind of messages the student and teacher were sending back and forth. Rather than explain them to me, they offered to show me. The student Mr.

Givens had been messaging with had taken a screenshot of the conversation and posted it to Snapchat where her peers and friends would be able to see it:

> MR. GIVENS: Ready to do it [the play] again?
> STUDENT: Absolutely!
> MR. GIVENS: Good!
> STUDENT: It's been so much fun!
> MR. GIVENS: I agree. I'll be sad when it's over (crying emoji)
> STUDENT: Me too (sad emoji)
> MR. GIVENS: At least we have 2 more
> STUDENT: Gotta make these last 2 great!
> MR. GIVENS: How are you gonna do that?
> STUDENT: I'm just gonna work it in my flamingo [her character in the play] costume!
> MR. GIVENS: Can't wait to see!
> STUDENT: I'll make it my very best show just for you!!
> MR. GIVENS: You're too kind (crying emoji)

In the texts between the student and Mr. Givens, which occurred at 11:28pm, nothing sexually explicit is mentioned, but the tone is inappropriate for messages occurring between a member of the faculty and a student. After the students at the lunch table showed me the screen shot of the texts, they all start handing their phones over to show me memes their peers have made about the situation. I ask the students at the lunch table what happened and they tell me that the young woman's mom found the messages on her phone and turned them in to the principal, which led to the immediate removal of the teacher at the school. That same evening, when I checked my WCHS email at home, I saw an email in my inbox from Principal Jackson, addressed to the faculty. In the email, Mr. Jackson informed teachers that he had left a voicemail for community members addressing a recent incident with a teacher. He apologized for any questions the voicemail may have stirred up within the student body and thanked teachers for the extra effort they may have to put into their days, helping students understand what happened and addressing any questions. He also provided faculty with the text of the voicemail message he left for

parents, addressing the incident and informing them that the teacher had been immediately removed and the school had reported the incident to the West City Police Department as well as DCFS.

This incident was perhaps an extreme example of such an instance, but I saw situations such as this happen regularly enough. When various in-person injustices happened to, or with, students at the hands of adults, they often retaliated by posting information, pictures, videos, or examples online, rather than taking them to authority figures and because they evidence was recorded online, adults often faced swift repercussions. Even though I never saw students go to authority figures to turn in teachers, the evidence they gathered and shared amongst each other often led to disciplinary actions . Even though teachers and other adults attempted to maintain privacy or protect themselves from online misunderstandings by staying offline, students used digital communication and social media to hold adults accountable for their actions regardless.

Conclusion

Technology could both ease and complicate burdens for teachers in the classroom. Some of the technology used by students, namely Chromebooks and smartphones, helped teachers maintain classroom order, while others, mostly earbuds and AirPods, created a need for additional discipline. In both instances, however, student education suffered due to device distraction. Social media, additionally, blurred the lines between students' lives inside and outside the school, as well as provided opportunities for students to police the activities of teachers.

The Chromebooks and smartphones students used during the school day helped regulate students' bodies. A student who was goofing off on their Chromebook, for instance, looked a lot

like a student who was working on their Chromebook. While smartphones were not always allowed in classrooms, they were relatively easy for a student to hide. Because students were often tuned into their phones during their free time or when they were bored, they were less disruptive during passing periods, waiting for the start of class, and during quiet worktime in classes. This also meant that students who chose to goof off during class time were also less disruptive to their peers who chose to work. Teachers tended to use this to their benefit – by letting distracted students continue to be distracted by their devices, rather than reprimanding them, they were able to keep their more diligent students from being diverted by their peers. Yet, even for the most diligent student, the school day could contain pockets of boredom. High school students spent time moving between classes, waiting for class to start, and watching teachers troubleshoot classroom technology. Students' devices offered a quick means of entertainment in these moments of boredom.

Where teachers had less tolerance was with audio devices – namely earbuds and AirPods – that allowed students to listen to music on their smartphones. Sometimes students were allowed to listen to music during quiet work periods, but generally these devices frustrated teachers. Students commonly left them in during class time, attempting to hide them by only wearing one or hiding them with their hair or clothing. For teachers who did wish to keep tighter tabs on students' use of technology in class, AirPods and earbuds could be frustrating because they were less visible and did not require students to sit or move their body in a certain way that was noticeable.

Finally, social media impacted how students were, and could be, disciplined in school. When students posted content online, even if it was "private" or to a select number of friends, it was still public in nature, easily digitally spreadable by friends. Because students created a

digital paper trail of their misdeeds, the school was able to expand their disciplinary practices to activities that had occurred online, or use them as evidence against on-campus happenings. The adults associated with the high school often talked about how irresponsible teenagers were online, preferring to keep their own digital lives private, or nonexistent. Students, however, still used social media to hold them accountable to in-person transgressions, by regularly posting videos, pictures, and comments about teachers they felt had mistreated them or acted inappropriately. Thus, just because an adult chose not to engage with online activities did not free them from online scrutiny.

CONCLUSION

In the fall of 2017 I pulled into the West City High School parking lot towards the end of second period. As I turned off the main street I noticed that all three parking lots surrounding the high school were half empty. There was also a line of cars waiting at the front door – parents picking their kids up. I had the schoolyear calendar stuck to my fridge at home and mentally kicked myself. How did I miss a half day of school? I parked my car and walked into the school to wait outside a classroom with which I was familiar. My plan was to see what students were sitting in the classroom to get an idea of what period the day was currently in. However, after walking through eerily quiet hallways, the students I expected to be in class during second hour were who I saw. *What was going on?* After the bell rang indicating the end of the period, a substitute teacher left the classroom and I walked to my usual seat. I waited for someone I knew to walk in so I could ask why everything seemed so off. Half the class was missing. Finally, two young women I usually chatted with sat down next to me. "Where is everyone?" I asked. "Did I miss a half day? Is there a fieldtrip?" "We're locked down today" they told me. "There's a shooter threat". I felt my breath catch. The eeriness of the hallways made sense. As the third hour teacher, Ms. Brown, arrived in the classroom she walked over to me and asked if anyone told me what was going on. I said yes and she told me that everything should be fine, there was plenty of security around the building and all the building doors were locked from the outside.

The rest of this story took me almost a year to fully unravel. A student, a Latino senior who went by the nickname Lil Nickels, was bullied by several of his peers. As one teacher, who knew the student well, explained it to me:

> Last year there was a bullying incident. A couple of kids had bated another young man into asking a girl to prom. It was a set up. So they all meet at this place and this young man was going to meet them there to ask this girl to prom. I don't know the full

> innerworkings of it, but a couple of boys set it up and it was basically a big coup. To embarrass that young man.

From there, Lil Nickels, who the teacher described as a good kid but somewhat aloof, retaliated by posting a picture of himself online holding a gun. Charlotte told me about the day it happened, explaining, "I was in bed and then someone from my friend group shared this picture of this guy with a gun and the caption was like, 'I'm gonna shoot up tomorrow'. And they shared it in our group chat." Every student who mentioned this incident told me a nearly identical story in regards to how they found out. As Jessa told me, "I had Snapchat then and I wasn't friends with him. But the screenshot of his post was sent to a girl on my volleyball team who then sent it to our group chat. And then I got it and could send it to people who were like, 'What's going on?'"

At the time, Lil Nickels was suspended from school for an unrelated reason. The school found out about the threat quickly and put precautions into place. Police were positioned around the building and at every street entrance to the school. Many students stayed home from school that day, or their parents picked them up early if they hadn't yet heard about the threat before they left for school in the morning (thus, the line of cars waiting to pick students up when I arrived at school). Despite feeling like the school had a handle on the situation, and knowing that it would be nearly impossible for Lil Nickels to enter the school if his threat was legitimate, it still gave the school day an itchy feeling. Throughout the day some friends of Lil Nickels who were students at a neighboring high school insinuated, via social media, that they were going to make good on his threat. All day students speculated what was going on and what might happen. When the bell rang at the end of 8th hour, I was happy to head home.

Five months later, in March 2018, I arrived at school early to observe the National School Walkout, organized by students around the country to protest gun violence one month after the

Marjory Stoneman Douglas High School shooting that had killed 17 people (Kramer and Harlan 2019). Information on the walkout travelled around between students and faculty in the weeks leading up to it largely through social media and messaging apps. Schools around the entire Chicagoland area debated how to handle the National Walkout. Some supported from a distance, others threatened students with detentions. Students at WCHS speculated wildly as gossip about potential punishment and support passed between students' devices and social media. In the end, Principal Jackson and the faculty agreed to set time aside for students to walk out. They set up barricades to keep students contained in one giant allocated spot and loaned organizers a PA system with which to give speeches. At the allotted time, 10:00am, Tala and I made our way outside to participate and see what the organizers had put together. A table was set up to register students 18 and older to vote. A line of parents had showed up around the school holding signs that said, "We support you!" Some students carried signs reading, "Is America great again yet?" and "Minute by minute is how we'll win it". A young black man who stood next to me shouted, "Y'all weren't doing this when MLK was shot. Y'all weren't doing this when Philando Castile was shot."

I looked around and thought about the threat we had received at WCHS months ago and the walkout. Both were largely communicated and organized through digital communication and social media. Nationwide students agreed to wear orange shirts to note the occasion and I wore my own orange shirt, which I had acquired through my online network, eventually purchasing from a high school student whose mom was a friend of mine. Both of these events took place in the high school, during a high school day. Online these events were organized, shared amongst students, and debated over. And when both school days ended, information about them continued to travel amongst the networks in which students were all connected. When the impact of school

technology is measured in math grades and SAT scores, the less tangible interruptions and happenings, such as these, are missed. What does it feel like to receive a shooting threat from a peer during second hour English class on your phone? What does it feel like to hunch over, watching YouTube videos on a small laptop monitor all day rather than listen to a teacher lecture?

As I have demonstrated in this study, technology's impact on high school cannot be understood in simple quantitative measures. Adding internet-connected devices, such as Chromebooks and smartphones, into the school day connected teachers and students to the outside world, as well as each other. This connection meant that high school stakeholders were constantly accessible to those around them and accountable to their actions due to the digital paper trails they left behind. When Hochschild (1997) discussed the "time bind" 20 years ago, it was in relation to adults feeling the strain of workforce expecations within their homes. With the constant connectivity high school students feel to their teachers, peers, and school expectations, this conversation should be expanded to include the role of students. Students spend a significant amount of their time at the school, often close to 12 hours if they are involved in after school activities. With constant accessibility and social media documentation, they were rarely able to fully step away from their roles as students and representatives of the school.

When schools include connected technology into their school days, they create opportunities for access to new information and resources. Where previously schools were limited to textbooks or other materials pre-arranged by teachers, connected technology gave students the means to get in-the-moment information on questions they had. If a student wondered what a particular cell type or 17th century armor looked like, they, or their teacher, could look it up instantly. Yet because so much information and education-specific content was

available online, this also meant that teachers could direct students to online content in place of teaching. The claim that 1:1 technology evens the playing field for students can be true to a degree: students with no at-home access to technology now have access to it. Yet when teachers rely so heavily on technology, this can disadvantage students who have less comfort with technology or who need more one-on-one attention and assistance from teachers. I argue that technology, despite being used by schools as a competitive advantage, does nothing on its own to impact and advance students'. Instead, it is the teachers who tirelessly devote themselves to learning to use these devices as tools that have the greatest impact. It is true that technology can help capture performance data on students and create targeted lesson plans for students. But teachers still have to put in the time and energy to adapt their lesson plans to this technology and pay attention to individual student needs. Computers do not come equipped with empathy.

A perhaps unintended consequence of digital devices on campus is a change in how students distract and entertain themselves during free time. With a host of communication, information, and gaming options at their fingertips, pervasive technology means that students are much less outwardly disruptive than they were without them. Teachers rarely had to police students for goofing off in class or distracting their peers. With technology, disinterested or bored students could instead find quiet ways to occupy their time with their devices. By allowing this type of distraction amongst students, teachers provided positive reinforcement to students. Rather than insisting students put devices away or get back to work, students instead learned that what was largely valued by teachers was the appearance of work: a quiet, still body that was not disruptive.

Additionally, because of the content that is often captured and posted with connected technology, high school students were opened up to additional opportunities for discipline (boyd

2014, Lane 2019). This could then lead to additional opportunities for uneven discipline within the student body. While this information was not new, I found that students used the capabilities of their social networks to police their teachers, as well. Where teachers largely preferred to keep a low profile online, so that students could not find out much personal information about them, students believed in their own right to share teacher information online. In this way, students created paper trails on behalf of their teachers, calling into question their actions and making it easier for teachers to be reprimanded when evidence of misdeeds made it to their bosses. With all these new ways for information and access to infiltrate the school, I found that the biggest determining factor in how students were taught, disciplined, and accommodated depended on the individual attitudes of teachers and administration. Arming teachers with the tools to consider students' socioemotional lives, individual backgrounds, and specific needs would not only lead to better teachers, but also to greater technological benefits for the entire study body.

Future directions for schools and technology

I was consistently surprised that no tool was present at West City High School for evaluating students' skills with technology. Throughout this study I often used the example of touch-typing as a stand in for tech skills as a whole, because it was the baseline for what students were taught, at some point (often in middle school), about technology. Yet students fed into WCHS from schools all over the area, and sometimes the country or world if they had recently moved. Skill differences among students could be uneven or nonexistent. Computer skills also extend well out from how fast or accurately a person can type as computer use generally requires some amount of troubleshooting. Documents disappeared, printers lost connection, and document formatting got wonky regularly. Not to mention, technology rapidly changes. When

students have a flimsy grasp on how to use Microsoft Suite products when they are ten, the hurdle they can then face when figuring how to use, for instance, Google products five years later, can feel insurmountable. Not to mention, technology tools that propose to expand students' abilities can limit their ability to work outside their current skillsets. If you don't know, for instance, how to paste a picture into a document, you may not going to play around with how pictures can help inform or support your claims. Implementing an assessment tool for students can help catch what skills students need help with. Not only are functional computer skills important to test students on, but so are less tangible skills such as identifying credible sources and understanding what qualifies as cheating.

Teachers have a huge impact on students' comfort in the classroom and with technology. And teachers' own comfort with technology should also be considered. The teachers most respected by students at WCHS were those who took a personal interest in their lives and successes. One teacher, a white man in his early 40s who taught anatomy, started every class period by allowing students to ask any questions they had. These questions were sometimes related to anatomy and sometimes not. I saw a young woman ask about her grandpa's upcoming knee surgery, wondering what parts of his knee would be impacted and what the process entailed. One young man, who was small in stature, asked why he was having trouble bulking up even though he was weight lifting. The latter struck me as the kind of question another student, or another group of students, would find embarrassing or too personal. But because of the standard this teacher set in the classroom, students were all ears. They were interested in the physical logistics of understanding this question and not on the fact that their peer, who was on the smaller side, was trying to alter his body to become physically bigger. When students can ask

vulnerable questions such as these, they can also ask vulnerable questions about their lack of understanding when it comes to issues with a lesson or their technology.

When students first received their Chromebooks, teachers made it a point to look at students' laptop screens as they followed along with classroom lessons. Teachers spoke slowly and provided clear directions on the location of various documents or resources within their Google Drive. Often, teachers would project their own computer desktop on the board at the front of class and navigate online with students. After a few days, teachers largely stopped doing this, assuming all students were up to speed. As new tasks are introduced and new skills are called forth, these sorts of practices should continue. Assuming that an entire classroom has a base level of information can hurt those students who lack technology skills or know-how.

Teachers also displayed varying levels of comfort with technology, just as students did. A few times I found the technology lessons they provided and displayed to be concerning. For instance, Google Slides, which most teachers relied on for lessons and lectures, were often poorly designed for students. It was rare that teachers would share their slides with students. Instead, students were expected to take notes on the content projected on slides. In so many classrooms, I often found slides difficult, and sometimes impossible, to read. Multiple times in my fieldnotes I wrote, "The text is so small. How can students behind me read this?" Especially in classrooms where students were less comfortable speaking up, I watched students copy notes off friends or simply resign themselves to being unable to read the text. Resources to make sure teachers understand how to use technology to the benefit of themselves and their students would be beneficial. Many teachers I talked with and observed had been teaching for long enough that pervasive technology was something they added into their skillset throughout the years. It's also possible that not every teacher's lesson plan or personality works best with technology, which

should also be recognized. Two English teachers I observed fell on opposite ends of the technology-use spectrum: one relied on it heavily while the other had a tech-free classroom. Both teachers were engaging, funny, and energetic in their teaching. It was clear students enjoyed their classes and respected them as teachers. Forcing the tech-free teacher to implement technology would not necessarily make her a better teacher. Saving room for teachers who prefer a more analog approach to teaching is important.

In the case of WCHS, a resource for internet and research issues existed on campus. Ms. Ward, the school's Technology Director, who also held a PhD in Instructional Design and Technology, could help teachers find class-related answers for themselves or, in some cases, provide instruction in their classrooms. Thinking back to Ms. Brown's conversation about teaching students how to do a "Google Smart Search", which seemingly does not exist, encouraging teachers to work alongside colleagues like Ms. Ward could help arm students, and teachers, with accurate information and the skills with which to find it on their own. When Ms. Ward and I talked, she told me she wished teachers and students would use her more often as a resource. Ms. Furly, at one point, suggested I chat with her and told me, "You would love her. She does a lot of trainings and she just comes up with cool things on how to use stuff and think differently. She really challenges people. More traditional teachers do not like her."

Generally, the way that technology was implemented by teachers and students at WCHS was a free-for-all. Teachers were encouraged to use whatever resources worked best for them, however they saw fit. Students had some freedom, such as being able to determine for themselves if they preferred to take notes by hand or typed, or choosing to make classroom presentations using poster boards rather than Google Slides. Schools, however, could benefit

from more cohesive technology strategies, in terms of how technology fits in as an actual tool, rather than a means to alleviate burdens.

Finally, students' full and complicated lives should be considered by schools. So many students I spoke with were heavily involved in the school or outside activities, such as jobs, church groups, or volunteering. Students' days were often long, late, and jam-packed with expectations from various adults. Students were figuring out how to navigate divorced parents, college demands, and their own relationship woes. Yes, students goofed off, broke rules, and were sometimes lazy. But they were also attempting to be good friends, good children to their parents, and respected young people, all while figuring out what they should do after high school graduation. As teenagers' accessibility to their various responsibilities is expanded through digital communication and social media, these tensions should be recognized by schools.

APPENDIX: STUDY DESIGN AND RESEARCH METHODS

In this study I draw on participant observations and in-depth interviews conducted with 29 students and teachers in a high school between 2017 and 2019. With this project I intended to design a study that provided an in-depth look at the processes by which schools, students, and teachers adapt to technology in the classroom. With this project I set out to answer two research questions: 1) What does it look like when technological devices and digital connectivity enter the classroom and 2) In what ways do students and teachers use these devices outside their intended purposes? In this appendix I discuss my decisions behind the research design of this project and the methods used for data collection and analysis.

Study design

When I started this research, I was initially interested in how social media and online communication fit into teenagers' lives. At the time, pop-psychology and journalistic think pieces spent a lot of time trying to convince parents that social media was either perfectly fine or completely dangerous, without a lot of middle ground. It was with this in mind that I wanted to see how online activities impacted teenagers' days, by doing an ethnographic project at a high school. However, once I entered the high school and was able to follow along with the process of acclimating to 1:1 Chromebooks for every student, I noticed that something more interesting was happening within the classroom: teachers and students were learning how to adapt to constant contact from the outside world as well as developing new rules and lessons that fit around the high tech classroom.

Adapting to technology in the classroom is more than just a pedagogical shift. Many schools were built before ubiquitous technology and West City was no exception. When 2,600

students are given laptops, the school has to figure out how to charge them in a building that was not built to accommodate pervasive technology. They also had to figure out how to accommodate students with varying levels of technological skills. I selected West City High School as my field site in order to watch the roll-out of this technology and to see how they adapted to it. Some of the students I talked with had used devices at schools prior to their enrollment at WCHS, but for most it was a new transition.

The majority of my research was conducted through observations, though I also interviewed students and teachers to help fill in gaps. During my first year on campus I also shadowed three students to get a better sense of what a full day at WCHS looked like.

Student recruitment and demographics

I recruited students in two ways: I approached students I had some familiarity with and I did a few pitches in various classes to introduce myself, and my project, to students. Generally I was looking for students whose perspectives I felt I had missed during observations and less formal conversations. I spoke to a couple students who were often in the same classrooms as me, but who I had not had a chance to have a more in-depth conversation with. I also went to a few classrooms I had not been able to spend much time in and made a few pitches to their classes in an attempt to recruit students to chat. For many students I was already a familiar face around the school, but I used these opportunities to properly introduce myself and explain what I was doing at their school. I explained to students that I was a researcher who was interested in learning about how they used their phones, Chromebooks, and social media to navigate and manage their lives. I also gave these classes opportunities to ask me any questions they wanted.

The biggest challenge to recruiting students was finding a way to contact them outside of in-person interactions and managing parental permission forms since most of them were not yet 18 years old. Every student at WCHS had an email address, which they rarely used. Instead I landed on using a smartphone application called Remind that a few students and teachers had recommended to me. This app allowed me to 'text' back and forth to students through the app, with communication routed directly to their text messages. Thus, students were able to receive real-time communication from me directly into their phone's text messages, without either of us having access to the other's phone number. Getting parental permission forms signed and return in hardcopy form would have proved too challenging, especially since students often liked to schedule their interviews with a quick turnaround. I ended up using an online electronic signature form to manage permission slips. This gave students the ability to text forms directly to their parents, who could then provide their signatures directly from their smartphones. Forms were then immediately sent to my email inbox, where I could check to see that their parents had consented to allow their child to be both interviewed and recorded.

Of the students I interviewed, six identified as male and 15 and female. Eleven identified as white, two as African American or black, two as Latinx, four as Asian American, and two as more than one race. I did not collect socioeconomic information, but most students were college bound in some capacity, with parents who expected as much. I did not intend to limit any of the identifying or demographic characteristics of any of the students I spoke with.

Teacher recruitment and demographics

I recruited teachers with the help of Principal Jackson. Many teachers I had an opportunity to meet when moving around the school and shadowing students. Whenever I went

into a classroom for the first time, I always introduced myself to the teacher and asked where I could sit in their classroom that would not be disruptive. However, there were some classrooms that were more difficult to walk into – shop classes and natural science lab classes, for instance – where my presence would be much more disruptive and, potentially, unsafe. Thus, I approached Principal Jackson in the Winter of 2019 and asked if he could help me fill in some gaps. I wasn't worried that Mr. Jackson's position as principal would skew who he led me to, after getting to know him for a year, and was not disappointed when he rattled off names of teachers and said things like, "Oh, you'll get a *lot* out of them!". As he told me, he tried to suggest a list of teachers who were fans of technology, as well as those who were more anti-technology. In the end, I was pleased with the content I gathered from interviews and the opinions and perspectives teachers shared with me.

Teachers were much more accessible via email and were all generally enthusiastic to chat with me. Teachers who had never met me often recognized me from the hallways or recalled seeing me in staff meetings. The faculty had been informed of my presence on campus when I began my fieldwork, so they were familiar with the idea of me, at least. I always gave teachers the opportunity to ask any questions before we got started with our interviews, as well as when we finished, in case they had any concerns or wanted to know more about what I was doing. In many instances we met in my office at the school, but a few times we met in their classrooms during free periods or after school. Most interviews lasted about an hour, again, the time of a free period, while others lasted longer. One outlier was three hours long.

Of the teachers I interviewed, four identified as male and four and female. Six identified as white, one as African American or black, one as Mexican American. I did not intend to limit any of the identifying or demographic characteristics of any of the teachers I spoke with.

Field site

This project looks at how a particular high school considers and adapts to technology. Because of that, I conducted all of my research within one high school, which I call West City High School, located in West City, a suburb of Chicago. While census information on the race and ethnicity of the town's population is not available, information is available for categories such as education, participation in the workforce, and median income level. Within the high school, race/ethnicity of students is broken down as follows: .1% identify as American Indian/Alaskan Native, 19% as Asian, 13% as black, .1% Hawaiian Native/Pacific Islander, 16% as Hispanic, 47% as white, and 4% as two or more races. In regards to education, the town has a lower percentage of residents with at least a high school degree than the U.S. average, and a comparable percentage of residents with a bachelor degree or higher. The town also has a higher percentage of residents wo are age 16 or older and are employed and a higher median household income than the U.S. average. While the town matches U.S. population averages on some things, it is noteworthy that education and income levels are slightly higher.

	West City	**U.S. population**
Education (HS grad or higher)	76%	87%
Education (Bachelor's or higher)	31.1%	30.3%
Population in civilian labor force (age 16+)	71.8%	63.1%
Median household income (2016)	$63,967	$55,322

Additionally, West City High School itself is rather large, with a student population of approximately 2,600. Graduating classes are roughly 650 students. Most students (94%) intend to go on to continue their education upon graduation from high school, with 6% of students intending to forgo additional education to enter the workforce or join the military. It is worth mentioning that this high school has received multiple recognitions for being a top performing

institution in both the state as well as the country. Thus, we can see that most students of this school are academically focused, with intentions to move onto further education upon graduation.

Data collection

Ethnographic observations

To get an understanding of the lived experiences and growing pains of adding technology into the school day, I conducted approximately 1,400 hours of participant observation between 2017 and 2019 at West City High School. These occurred in classrooms and during free periods such as lunch, passing periods, and school-wide activities (i.e. pep rallies). In classrooms I regularly sat with clusters of students, observing how they participated in classes, group activities, and socializing activities with their friends. Often times teachers would give me worksheets and study guides along with students and we'd work on them together. Students often assumed that because I was older and an advanced student that I would have all the answers and were often disappointed when I didn't. However, they almost always appreciated the extra help and teachers thought it was funny to include me as one of their students (some teachers insisted I take tests along with their students to see how much I had picked up in their classes).

The majority of my observations occurred in classrooms, but I also shadowed several students to get a better understanding of how their use of technology changed throughout the day and how teachers varied in their technology expectations. I was free to move about the high school building as I pleased, but shadowing students was one of the best ways to get acclimated to the high school, and to let students get used to my presence. These students acted as my

interlocutors, introducing me to their friends and informally vouching for me when their peers were unsure of my presence. Participating in student hang-outs, such as the lunch table, is where I was able to learn the most about student experiences and behind-the-scenes activities. Though we did not always talk about technology specifically, hanging out with students let me see how they used their devices when they were together and how they contacted each other during, and outside, the school day. Because students knew I was there to study technology, they also always made a point to tell me things they had seen or experienced that they thought might be of interest to me.

During my time in the field, I took notes on my phone on the things I saw and the interactions I had. Students were used to having their phones out, so generally they did not think anything of my interacting with my phone. At the end of every day in the field, when I got home, I would sit down and write out a longer reflection and memo on my observations. Often students would show me pictures on their phones of screenshots that were circulated and the subject of schoolwide gossip or happenings. When this happened, and when they passed them along to me, I inserted them into my fieldnotes to consult later. These memos and pictures were compiled together and coded at the end of each school year. Because I had the summer off of fieldwork, due to high school being on break, this gave me the opportunity to analyze my fieldwork at a middle point so that I could return to the field for my second year with more focused questions. This first round of analyzing also helped me develop the interview guides that I then employed for students and teachers.

Student interviews

In the spring of 2019, in the last few months of my fieldwork, I completed 21 interviews with students. Respondents were generally in their 3rd or 4th year of high school, because their seniority gave them greater freedom with their schedules, though I did interview one first year student. Students were generally between 16 and 18 years old. Because I was able to spend a lot of time with students during my fieldwork, I generally interviewed students with whom I was unfamiliar, or who struck me as having a unique perspective within the school. In some instances teachers helped connect me with students if I wanted an introduction or if they believed a student might have a unique perspective.

I used interviews, in conjunction with observations, to ask questions about subjects I had either been unable to observe in classrooms, or that I had observed and wanted further information and insights about. Interviews helped me clarify and ask questions about instances I had observed to gain a better understanding of individual experiences and reflections (Weiss 1995). West City High School graciously gave me my own office within a room rarely used by the high school. This allowed students privacy when meeting with me. I have no reason to believe students wanted to keep their interviews a secret, but several times students got emotional while recounting their feelings or experiences and having a private room in which to talk allowed them space to compose themselves before heading back out into their school day. Every interview was recorded and transcribed. Each student was given a pseudonym for this project. Interviews with students generally last about an hour – it was difficult to keep students beyond the length of one free class period.

By interviewing students I gathered the perspectives of teenagers on their use of, and experience with, technology in the classroom, as well as their experiences with social media. I began by asking students to describe their high school to me and any activities they participated

in. I asked students what technological devices they used on an average day and how they used them. I gathered students' experience and training on technology and asked how they troubleshooted issues when they were stumped on how to do something. I also asked about their social media experience – I had students recount to me what social media accounts they had, how often they checked them, what kind of content they posted, and how they generally managed their privacy (and if, for instance, they had multiple accounts). I always left room open at the end for students to tell me about anything they thought I missed or should have asked about during the interview process.

Teacher interviews

After interviewing students, I interviewed eight teachers to get their opinions on technology within the high school. I spent a lot of time with teachers during my fieldwork, and became well-acquainted with several, but because I never shared social space with them, their experiences were often more of a mystery to me than students' were. I recruited most teachers on my own, but also asked the principal and students for suggestions on who I should talk with. I spent time in many classrooms in WCHS, but because of the hands-on nature of some classes (for instance Chemistry labs and shop classes), there were a few teachers I was not able to meet naturally. Interviews with teachers helped me fill in gaps about how teachers made decisions to use technology (or not) in their classrooms as well as the social media they used and how they managed their personal lives online. Similarly, I wanted to know how they considered their students when they made decisions in the classroom and how they attempted to combat varying learning styles and interest levels. Generally interviews with teachers lasted between one and two hours. Each interview was recorded and transcribed. I gave every teacher I interviewed a

pseudonym. Because of the small number of teachers I interviewed, I also attempted to change some identifying characteristics. In a few instances I chose not to associate quotes with any pseudonym when a teacher disclosed an opinion that they were apprehensive about disclosing, to further protect their identities.

Data analysis

With permission from my respondents, I recorded and transcribed each interview. Incrementally throughout my first school year at West City, I began analyzing the fieldnotes and memos I had written during my observations. I waited to analyze interviews until they were all complete, as they occurred so close in proximity toward the end of my time in the field. I first open-coded the data without a set of predetermined codes to see what major themes emerged from the data (Saldaña 2015). From here I used second and third-order coding to identify sub-codes and pull out more nuance in my data. As new codes emerged, I revisited my data to make sure these new findings were included. With interviews I performed this whole process from start to finish several times. With observations I was able to perform rounds of analysis throughout my time in the field, using high school breaks to my advantage to comb through data, analyze, and write up memos on my initial findings (Emerson, Fretz and Shaw 2011). Because of a fluke in the coding software I initially used, I ended up having to do one final coding of all my data at the completion of my fieldwork, which provided me with a very time consuming, but altogether very valuable eagle-eye view to all my data. Using this process of multi-level coding allowed for a thorough analysis of all my data – both observations and interviews (Van Maanen 2011).

Positionality

It was common for students to inquire about who I was, mainly concerned with my age, as they started seeing me around campus. Most students seemed to realize that in some capacity I didn't belong in the high school. However, context clues are powerful and many students didn't have any insight into who I could be, if not a teacher or student. I like to believe I am youthful in appearance, and as a white woman in my mid-30s, students generally thought I was a student teacher – a college student working my way towards a teaching degree. Many classes had student teachers who managed their lessons some of the time, so I tried to display my own set of classroom characteristics, which mostly included being the bearer of free snacks. When I started attending West City High School, I made sure to be dressed as casually as possible. My general "uniform" consisted of jeans, a grey sweatshirt, and a bright blue pair of Nike Air Jordan's. Having bright pink hair as an adult also helped and I always carried a backpack. Sometimes, if I was waiting outside a classroom for the bell to ring, other students would stop to chat with me, asking if I was a senior. In one instance, a student asked me out to a football game, asking if I was a junior or a senior. Often, when students were taking exams or doing other intensive quiet work, I'd take the opportunity to use the restroom or fill up my travel mug with hot water in the teachers' lounge. While staff and faculty were getting used to me, I was reprimanded for not having a hall pass. Any time a class I was sitting in had a substitute teacher, they always stopped to ask me why I wasn't working: Where was my computer? Didn't I at least want to take notes? Students always laughed at this and often egged the substitute teacher on.

I realized quickly that many high school students, despite how academically-minded and college-oriented they, and the school, were, did not have a firm grasp on what a PhD Student was. After a few months, I ended up telling students I was a researcher who was on campus to

write a book. This description worked well with students who were academically-minded. Students who learned about my affiliation with the University of Chicago often asked me where I received my undergraduate degree and wanted to ask me questions about my current school.

I always felt like I was teetering a certain line with students – those who were academically-minded were eager to participate and had a certain amount of respect for my position within a prestigious university. Students who were less affiliated with the school were often skeptical and took longer to warm up to me. In all cases with students, they tended to warm up to me once they trusted I had a real interest in who they were and how they felt about things. Goofing off with students, and a willingness to break the rules in some instances, was a surefire way to show them I was trustworthy. Also, teenagers are always hungry; having snacks on hand never hurts.

I rarely had any issues fitting in with teachers or administration. I was introduced to the entire teaching and administrative staff at the start of my first year during a faculty meeting. I was not able to meet everyone, but they mostly knew who I was, often checking in with me as I walked around the school, asking how my research was going. The administrative staff always eagerly helped me find answers and offered to accommodate any needs I had (like storing my bulky coat in the winter or giving me access to hot water for the tea I drank every day). Whenever there was a staff luncheon they always invited me and insisted I attend. The Principal and Assistant Principals always welcomed conversations with me and almost always flagged me over to chat whenever they saw me in their offices or around the school. They never shied away from providing me with insights or issues they were experiencing, often offering them up without my prompting. There were a few instances, always when I was shadowing students, where teachers seemed less than thrilled with my presence in their classrooms, but they always

found me a place to sit. I almost always felt uncomfortable when students tried to talk with me during class time and get me to goof off, not wanting to suggest students pay attention and not wanting to be disrespectful to teachers. As time progressed, I found that teachers generally understood I was following students' lead. In most cases, if a student wasn't talking to me, they would have just found another student to chat with during class time.

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