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Invasive Technologies: How Administrators, Teachers, and Students Negotiate the Use of Students' Mobile Technologies in the Classroom

by

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Abstract

The rise in popularity of mobile technologies, particularly with respect to youth, has created new challenges and opportunities for districts, schools, and classrooms. As more students come to own these devices they have increasingly sought to use them in their schools and classrooms, with or without their schools' official support. Districts and schools have responded to this encroachment in a variety of ways ranging from establishing policies that dictate common practices across all classrooms to empowering teachers to create mobile phone policies for their classrooms.

In this study, I investigated how the conflicting demands of school-level and district-level policies, and student resistance and continuation to use their mobile phones in the schools and classrooms, have influenced teachers' classroom policies at two schools in different districts. I conducted a series of interviews with district and school administrators, teachers, and students in two schools with different policies guiding the use of mobile phones in the classroom.

I found that students resisted district, school, and teacher policies and pushed to use their mobile phones in their classrooms irrespective of their teachers' wishes. However, although students frequently used their mobile phones for non-educational purposes that detracted from their and their classmates' learning, many students used their mobile phones for educational and non-educational uses that supported their learning inside and outside of school. I also found that teachers tended to base their classroom policies more on their personal philosophies and the demands of their students than on school and district policies. These policies enabled teachers to explore the potential for students' mobile phones to support student learning.

My research suggests that districts could benefit from articulating clear philosophies regarding the use of mobile phones in schools and classrooms, particularly philosophies that encourage and support teachers in exploring the potential of these devices in the classrooms. These new policies would also benefit from districts ensuring the incorporation of more student and teacher voice into the policy-making process. I also propose a taxonomy of mobile phone use that schools and districts can use to support teachers in aligning their classroom practices with a school's mobile phone policy.

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CHAPTER 1: INTRODUCTION

Background

In 2014, the US population stood at 317 million. At the same time, the number of mobile subscriptions stood at 336 million, which was a ratio of 1:06 to 1 (CITA, 2014). The breaking of the 1:1 barrier is only the latest evidence of the rapid explosion in popularity of mobile technology over the past decade as it transferred from primarily a business tool to a ubiquitous staple of popular culture (Engel, 2011). Although the distribution of ownership is uneven—higher for instance, amongst urban (94%) and suburban (92%) groups than for rural (97%), and higher for wealthier and more educated adults—by 2014 more than 90% of all adults owned a mobile phone (Raine, 2013; Lenhart, 2015).

Educators should understand that mobile phone ownership trends are impacting the number of these devices that are entering their school doors each day. Mobile phone ownership and use among K-12 students has been on the rise. The cost of mobile phones has decreased even as the number of mobile phone features has increased. This combination of high functionality and reduced cost has resulted in a marked increase in student mobile phone ownership (Thomas et al., 2013). A 2010 Generation M Study reported that 66% of surveyed 8 to 18 year olds owned a mobile phone—a 25% increase from a similar 2004 study conducted by the Kaiser Family Foundation (Johnson, Levine, & Smith, 2009; C & R Research, 2010; Lenhart, Ling, Campbell, & Purcell, 2010; Rideout, Foeher, & Roberts, 2010). In a later study, Lenhart (2015) found that 88% of youth aged 13 to 17 reported owning a mobile phone or smart phone.

The rise in popularity of mobile phones has paralleled the growing importance of communication and social networks in the lives of youth. In the last 10 years, Facebook, now the largest social network in the world, has grown from relative obscurity to over 1.5 billion users. In 2010, virtually all US teens were online to some extent (95%); a sizable majority of those online youth (80%) used social networks to communicate and interact with friends, family members, and others (Lenhart et al., 2010). Similarly, 92% of youth in the Lenhart 2015 study reported being online at least daily, with 52% going online at least several times a day and 24% reporting being online constantly. Social media use also appears to have increased over the four years. In her 2015 study, Lenhart found that 89% of youth reported using at least one social network, while more than two thirds (71%) reported using two or more networks (Lenhart, 2015).

It is useful for educators to understand the near ubiquity of text-based communications among students because the momentum and behavioral norms that these students establish outside of school are unlikely to stop at the school door. One of the core uses of social media is text-based communication. Indeed, according to the 2010 study conducted by Lenhart et al., the top three uses of social networks by teens all involved text-based communications: posting comments on friends' posts, posting status updates, and sending instant messages or chatting with friends. Sending private messages to friends fills out the top five, after posting photos or videos and just before tagging people in these photos or videos (Lenhart et al., 2010). Text-based communications are also not relegated to social networks; texting (via SMS) is still very popular amongst teenagers. The proportion of teens in Lenhart's 2015 study that reported sending text messages (91%) was similar to the percentage that reported using a social network (89%)

(Lenhart, 2015). When the students texted, they tended to text a considerable amount. Teens reported exchanging (sending or receiving) between 30 and 50 messages a day (Lenhart). A 2010 study found that seventh through twelfth graders reported spending an average of 1.5 hours a day sending text messages (Rideout et al., 2010). Moreover, teens regularly continue their text-based communication while at school. When surveyed in 2010 almost two-thirds of mobile phone-owning high schoolers (64%) reported texting during class (Lenhart et al., 2010). Additionally, at the 24% of schools that banned all mobile phones from school grounds, a slightly lower percentage of students (58%) reported text-messaging in class (Lenhart et al.). The percentage of teens that reported text-messaging during class was very similar irrespective of whether their school banned the devices.

Although mobile phone ownership by teens is high across all demographics, some distinct trends in ownership and use have been observed. Understanding these trends and patterns across demographics could help educators better understand their particular student populations. One notable statistic: although 73% of teens across all demographics in the 2015 Lenhart study reported having a smart phone, 85% of African American teens in the study reported having access, compared to 71% of white and Hispanic teens. In terms of use, students from families earning less than $50,000 annually were more likely to use Facebook, one of the more popular social-networking sites, than students whose families made more than $50,000 annually. On the contrary, Snapchat and Twitter, two smaller social-networking sites, were more popular amongst youth from more affluent families (those making over $75,000 annually) when compared to youth from families making less than $30,000 annually (Lenhart, 2015). The study also observed differences

in mobile phone use by gender. Girls reported using various social media like Snapchat and Instagram at a higher level than boys. When it came to video games, however, boys were more likely to be users; they reported using their phones to play games more than girls (84% vs. 59%) (Lenhart).

Because mobile phones have become so pervasive and integrated into students' lives, they have found their way into schools irrespective of the schools' readiness to deal with them. Schools and districts are realizing that they must respond to the influx of these devices and have started revisiting and adjusting their policies and strategies (Johnson et al., 2012). Districts and schools that had previously banned all devices from the classroom are realizing that they cannot merely dictate prohibitive policies banning or severely restricting the use of the devices and expect students and teachers to follow them. Many have revisited their strategies. These policies must not only account for student-data protection and student safety (e.g. cyberbullying and inappropriate solicitations), they must also respond to student interest and academic needs (Lemke et al., 2009). Districts have consequently landed on different parts of a spectrum ranging from prioritizing student data protection by restricting what can be done with students' devices, or outright banning them on one end; to prioritizing the exploration of educational uses for these devices and associated technologies through more permissive policies on the other end of the spectrum (Garcia, 2011).

Teachers have also had to respond to the phones in their classrooms. Due in part to the newness of the devices and frequent lack of clear and concerted district, school, and instructional strategies regarding their use; teachers' acceptance and engagement with these devices are often most strongly influenced by their personal experiences,

interests, and attitudes (Brown, 2014). Those attitudes vary significantly. One teacher survey found that up to half of the teachers believed that mobile phones could help engage or motivate their students (Orthober & Thomas, 2011). Other researchers have found a broad spectrum of teacher attitudes and strategies for dealing with their students' classroom mobile phone use (Brown, 2014). Parallel to the variation in district policies, teachers on the more restrictive end of the spectrum completely prohibit the use of these devices. Teachers at the opposite end of the spectrum actively engage students with their devices for educational purposes (Brown). Tables 1 and 2 catalog the variation of mobile phone use and classroom policies present in schools.

Table 1

Taxonomy of Mobile Phone Use in Classrooms

Student-Initiated Use	**Examples of Use**
Educational Use (Inside and Outside of School)	▪ Using as calculator ▪ To look up information ▪ To compose school work and homework
Non-Educational Use	
Potentially Neutral Impact on Learning	▪ Short "breaks" for reviewing texts or social media
In Support of Learning	▪ Listening to music while working to "focus"
Harmful to Learning	▪ Extended text messaging or other social use during class activity

Teacher-Initiated Use	**Examples of Use**
Educational Use	
Supporting Student-Initiated Use	Suggesting educational related apps and resources to students for their individual work
Teacher Directed	Interactive classroom activity leveraging students' phones
Non-Educational Use	
In Support of Learning	Student-Teacher Texting for Student Support

Table 2

Types of Classroom Policies Developed by Teachers

Type of Classroom Policies	Use Allowed
▪ Prohibition ▪ Restrictive (only teacher initiated/led) ▪ Utilitarian ▪ Permissive	▪ None ▪ Teacher Initiated/Led ▪ Teacher-Initiated and Student-Initiated for Educational Use ▪ Teacher-Initiated/Led and Student-Initiated Educational Uses and Non-Educational Uses that are Not Harmful to Learning

Before discussing my research in more detail, I will first review the relevant literature that investigates the popularity of mobile phones among students, and traditional responses by schools, districts, and teachers to the encroachment of these devices into the classroom. I then outline the research design, including the guiding research questions, site and participant selection, and data analysis methodology. Next, I present two case studies of the two schools I studied. The case studies explore how the various stakeholders in each school and broader district negotiate the educational and non-educational uses of mobile devices in the classroom. The purpose of writing the two separate case studies is to better understand the variations in relationships, beliefs and actions between the different stakeholders in each school and system. After presenting these two cases, I present a cross-case analysis to highlight my major findings of similarities and differences between, and patterns across the two schools. I then conclude with suggestions and recommendations drawn from the research and implications for additional research to complement and supplement my findings.

Significance and Impact

In this study, I investigated how, within each of two districts, district and school policies actually impacted classroom policies about mobile device use, and how these same stakeholders thought about the potential of these devices for learning. I analyze how

the various stakeholders in these two districts compare and differ in their governance and use of these devices for learning. I will first produce individual case studies for each district and school to gain deeper understanding of the beliefs, behaviors and interactions of the different stakeholders. I then compare the two case studies and report my findings.

Knowledge of how students and teachers actually comprehend and work within district policies, coupled with a better understanding of how they use these mobile devices, would be instrumental in creating more useful policies and broader approaches to governing the use of these devices in schools. Additionally, this insight into the perspectives and uses of these two stakeholders could strengthen the case for districts taking more inclusive approaches and including teachers and students in their process for drafting their policies.

CHAPTER 2: REVIEW OF LITERATURE

The Appeal of Mobile Phones

Why are mobile phones so popular with teenagers? Why do they seem to find mobile phones and social networks so appealing—if not addicting? The findings of a 2015 study by Berry and Westfall suggested that students use their phones to go online and use the school's wireless network for non-educational purposes even if their teachers attempt to embrace the phones and incorporate them into their instruction (Berry et al., 2015). Indeed, one study of undergraduates identified 75% of the students in the study as having at least one symptom of Internet usage addiction. A further 10% of the students demonstrated characteristics associated with pathological Internet usage. The study defined pathological Internet use through a series of 13 questions assessing evidence that Internet use was causing academic, interpersonal, or intrapersonal harm (Morahan-Martin & Shumacher, 2000). To better understand the appeal of mobile phones for teenagers and how that appeal may impact the classroom, I will first review literature on motivational theories and connect those with the theory of transitional objects. I will then investigate how those theories have been and may be applied to formal education.

Individual motivation can be broadly separated into intrinsic and extrinsic motivation. Intrinsic motivation can be described as that type of motivation that is sourced from within the actor—where the act being done is itself the reward. Extrinsic motivation by comparison can be described in an instrumental fashion whereby the act being done is actually a means toward a certain goal/reward (Lepper & Henderlong, 2000). When a student reads a passage, deconstructs a poem, or writes a 20-page term paper, the source of her motivation—whether intrinsic or extrinsic—is important in that it

may expose how she values the work and any content and/or process-knowledge gained from it. Perhaps more importantly, understanding the source of the student's motivation would indicate whether she is likely to engage in similar work without extrinsic incentives. If the student enjoys the act of reading the story and formulating her argument for her paper, then she could be considered intrinsically motivated to do the assignment. However, if her primary motivation for completing the assignment is not the actual act of reading and writing, but the ultimate goal of scoring an A on the upcoming exam, then she could be considered primarily extrinsically motivated to complete the assignment. Many such education-related actions are driven by complex mixture of intrinsic and extrinsic motivation. Understanding the source of students' motivation for classroom activities can be helpful in understanding why students often find these activities less appealing than their mobile phones.

Motivation Theories

Ryan and Deci's (2000) seminal work on motivation aimed to unpack the constituents of intrinsic motivation. In their self-determination theory, the researchers suggested that the needs of competence, autonomy, and relatedness must be satisfied for a person to be intrinsically motivated (Deci & Ryan, 2000). These needs correspond roughly to the psychological and self-actualization needs of Maslow's 1943 hierarchy, in which these higher-order needs sit atop basic needs such as food, water, and safety (Gawell, 1997). In general, for people to be intrinsically motivated to do something, they must get from that something a sense of belonging, a sense of autonomy (which other researchers have interpreted as control), and perhaps more importantly, a sense of competence—of having done something well with one's own abilities (Deci & Ryan,

2000; Lepper & Henderlong, 2000). An analysis of how these constituent needs impact student motivation in the classroom could add nuance to the understanding of the classroom appeal of these devices.

The notion of competence in Ryan and Deci's (2000) motivational construct is especially relevant to student motivation. This concept is similar to Bandura's (2002) framing of the importance of self-efficacy in student motivation. Students with high levels of perceived self-efficacy, Bandura suggests, are more confident in their abilities to regulate their learning. The more confident they are that they can be successful at learning, the more motivated they are to engage in learning and in school. This perceived high self-efficacy can be related to the concept of grit—the perseverance and passion for long-term goals (Duckworth & Peterson, 2007). Students with high self-efficacy who are more motivated to engage in challenging school work can also be seen as more likely to persevere in face of challenges. Indeed, a 2015 quantitative study of college students investigating the relationship between grit and students' self-regulation found that components of grit were consistent predictors of self-efficacy (Wolters, 2015). Students who genuinely believe that they can be successful and are willing to work hard to achieve that success are generally more motivated to pursue that success. If students' use of their mobile phones can help them feel more competent—after all, they've all already mastered these devices—then perhaps these devices and the related sense of competence can be leveraged for educational purposes.

The Mobile Phone as a Transitional Object

Complementing the motivational challenges students are facing in school is the struggle for autonomy they face at home (Deci & Ryan, 2000). Winnicott (1965, 1971)

described a child's transitional object as its first 'not me' object. This was their first object—the author describes a child's first teddy bear—that marked the realization of otherness. The transitional object helped them become aware of their uniqueness from others—especially their parents, while maintaining a connection with others—because the object was provided by the parent. The existence of such objects in the context of the mother and child relationship created a "potential space" where the child's individuality could safely encounter the social world.

As children enter their teen years they begin challenging parents' control: physical boundaries and restrictions, family rules, parental surveillance, and censorship (Ribak, 2009). In the context of reaching for autonomy, mobile phones could be seen as these "transitional objects" that help children transition from parental dependence towards independence. Like the teddy bear, it is (typically) the teenagers' parents that purchase the mobile phones. In both situations, the parents present the object, and the child accepts, personalizes, and uses it for her own purpose. In their pursuit of autonomy and control, the children seek to create their own world away from their parents. In their summary of interviews with Australian teenagers, Gillard et al. (1998) suggested that youth going through this transition to establish their independence and autonomy employ strategies such as code switching—the subtle reflexive switching of speech patterns when interacting with different groups, physically separating themselves from parents, and keeping their conversations and interactions with friends private.

According to a 2010 study by Hanson et al., at the same time that teens are fighting for independence from their parents, they are seeking to connect with their peers. This study suggested that millennial students spent more time on social network sites

than they did on their homework. As discussed earlier much of this peer-to-peer social interaction is done through mobile phones. The students also use the phones to connect with their parents. Researchers have found that both teens and their parents strongly believe that mobile phones are not only core to teens' social lives but are also essential to maintaining connections with parents in high school and beyond (Deviate & Roker, 2009; Bauman, 2009).

Teenagers find mobile phones eminently convenient because they are not only portable—unlike desktop computers, but they are also unobtrusive—unlike even the smallest of laptops. This unique level of portability allows the phone to be carried with the user more often and, consequently, to become a more personal artifact. This level of personalization and implied intimacy resonates with Ryan and Deci's (2000) motivational construct (autonomy and control) as well as the allure of relatedness in the social networks that these phones serve as a portal to—as described by Boyd (2008).

Framing teenagers' mobile phones as transitional objects underscores the importance of the devices to teenagers' lives, and brings context to the demographic and use information presented earlier. Almost 90% of teens own mobile phones and about 80% of them use them for social networks in part because these devices are becoming crucial to their development (Lenhart, 2015). Consequently, it is not surprising that many of these students believe that all learning should be infused with technology and that their mobile devices are essential to every aspect of their lives (Garcia, 2007). For many of these students, their devices are an extension of themselves, and the social interactions they engage in through their devices is essential to their lives. To them the "Internet is like oxygen," and their primary access to this oxygen is their phones (Garcia, 2007). Any

attempt to prohibit their use in class is often seen by the students as unfair at best and a moral violation at worse (Garcia, 2007; Quann-Hasse, 2007).

What Happens to Motivation as Teens Transition into High School

Although the notion of transitional objects may help explain the importance of mobile phones to their teenage users' quest for autonomy, a review of the mismatch between typical school processes and structures and students' increasing demands for autonomy and relatedness further explains the allure of these devices in the school context. The notions of autonomy, competence, and relatedness in Ryan and Deci's motivational construct can help explain much of students' interest in their phones as an avenue to express control over their interactions and connections. Not all students experience classroom environments that foster those motivational constituents, however. Some students experience a decline of motivation, self-esteem, and self-efficacy as they progress through school (Seidman et al., 1994). Researchers have suggested that this decline in motivation is significantly influenced by the change in classroom structure and teacher practice (Lepper & Henderlong, 2000; Eccles & Midgely, 1989; Chambers & Condry, 1978). Lepper and Henderlong (2000) suggested that for many students, motivation in school starts to decline around middle school and continues to fall as students progress into high school. The researchers believed that the structure of classrooms and the style of teaching in many middle school classrooms negatively impacted students' motivation. The authors proposed possible reasons for this decline such as the undermining effects of extrinsic incentives and constraints in classrooms, the decontextualization of learning, and the changing levels of challenge as students progress in school.

Lepper and Henderlong (2000, p.282) described the *undermining effects of extrinsic incentives and constraint*s as the *social controls* whereby teachers focus on having students be "quiet and docile." These controls increase as children progress through school. Eccles and Midgely (1989) suggested that social control is an extrinsic (classroom environment) force that counters children's developing needs for autonomy (Lepper & Henderlong, 2000). "Just as students begin to thirst for increased autonomy and personal growth, schools seem to increase their focus on discipline, provide fewer opportunities for decision making, and assign less cognitively challenging coursework," (Lepper & Henderlong, 2000, p.282). Such a context, the researchers argued, does not allow for space and time in which teachers and students can meaningfully interact, let alone build strong nurturing relationships.

Lepper and Henderlong (2000, p.282) described the decontextualization of learning as the process of teaching "skills and imparting information in a highly abstract form" that is "independent of any particular context of learning." They suggested, following on Chambers and Condry (1978), that the separation of learning from relevance and context creates a learning experience with no "natural value" for students. This experience will not benefit from students' "natural curiosity" resulting in "severe motivational costs" to the learning process (p.283). Ironically, they argued, this increasingly common progressive decontexualization of learning as students progress in their schooling is based on an intentional decision to abstract learning in order to produce more generalizable, less situation-specific learning. Students in their later grades, this school of thought argues, do not need more specific, relevant and intrinsically interesting lessons as they do in the earlier grades, because they should already be motivated to

achieve, independent of their intrinsic interest in an activity. It is not the later grade teacher's job, the argument concludes, to make learning more interesting (Chambers & Condry, 1978). In such a learning environment, others contend, there is little space for students and teachers to meaningfully interact about students' personal engagement, motivation, or interest (Yonezawa, McLure, & Hones, 2011; Yazzie-Mintz, 2010). A technology that could help educators counter the depersonalizing and decontextualizing effects of classroom structure and teaching philosophy could prove helpful. This misalignment of school and teacher focus with student interest could create a motivational chasm, which students would be tempted to fill with their mobile phones.

Another component of the decline identified by Lepper and Henderlong (2000) relates to the change in the levels of challenge experienced by students as they enter high school. Here they presented two arguments: First, that the level of challenge experienced by each student varies less as they progress into high school due to greater standardization, and second, that there is a steady decline in the level or challenge experienced by students in these higher grades (Csikszentmihalyi, 1975; Deci, 1975; Eccles et al.,1993). The argument for standardization in high school resulting in varied levels of challenge aligns with the decline of motivation theory in that standardization results in the assigned tasks being too challenging for some and not challenging enough for others. Because an appropriate level of challenge has been linked to motivation, the argument follows that many students would become demotivated in a typical class (Csikszentmihalyi, 1975).

Lepper and Henderlong (2000) described a process by which students can become demotivated in school due to the lack of control, of perceived relevance, and of

appropriate level of challenge due to the standardization of curriculum that students experience in the high school classroom. A gap can develop in schools between what students need—control and personalization—and what they are getting—inflexible structures and standardization (Yonezawa, McLure, & Jones, 2011). Because of their ubiquity, their intimate and personal nature, and their ability to connect students with anyone and transfer them anywhere even as they sit in a classroom that does not suit their needs, students' mobile phones present a significant challenge to traditional classroom processes and pedagogy. If teachers cannot keep the students' attention, students can easily find something else that does. And they do not have to leave class to do so.

Schools Get the Message

As mobile phones become more powerful and capable with messaging and social networking applications, these devices have become more central to students' lives. In part because many students have insisted on using their devices in schools despite bans, schools are realizing that they have to respond accordingly and have started revisiting their policies (Johnson et al., 2012). Many districts that had previously banned all mobile device use, prompted by the ubiquity of these devices, have begun to revisit their plans. Simultaneously—often driven by district mandates—schools and teachers have begun considering how to integrate these devices into the classroom (Thomas et al., 2013). In his 2013 survey of 79 teachers, Thomas et al. found that more than two thirds (69%) of the teachers supported having cell phones in the classroom. However, introducing phones into schools and classrooms as part of instruction has proved to be a daunting and complicated challenge. Although there is a significant body of research that shows potential pedagogical benefits of integrating students' mobile phones into classrooms,

this body of research is still relatively new (Baker et al., 2010; Brown, 2014; Jansen & Phillipson, 2015). Moreover, there is a similarly significant body of research illustrating numerous structural, implementation, and mindset challenges to bringing mobile phones into schools and classrooms via intentional pedagogy (Begeja, 2008; Ertmer, 1999; Kulesza et al., 2010; Kuznekoff et al., 2015; Obannon, 2014; Robinson et al., 2010).

Mobile Phones in the Classroom: Potential for Educational Use

Before presenting research that discusses the challenges to integrating mobile phones into the classroom for educational purposes, I will first review research on the potential and use of mobile phones in the classroom. I will also review research on the opinions and beliefs of educators about the potential of these devices in schools and classrooms.

Students' use of mobile phones in classrooms for educational purposes or other school-related benefits might be broken into two categories, (a) student-initiated and directed uses and (b) teacher-initiated classroom-wide implementations (see Appendix A). Mobile phones can be used by students for ad hoc low-level technical purposes that do not require teacher interaction. Such uses include students using their mobile phone cameras to take pictures of assignments, going online to search for course related information, or using the calculator on their phones for coursework (Brown, 2014; Eifle, 2009; Engel & Green, 2011; Johnson et al., 2010). In his 2014 paper reviewing the potential of mobile phones in ESL classrooms, Brown discussed how students can use their phones to take pictures of items for class use. Berry and Westfall (2015) also found that students often use their mobile phones to take pictures of the classroom board and materials for documentation and as memory aides.

Numerous studies have focused on the many ways that schools and classrooms can intentionally integrate mobile technology into the curriculum. Because learning is inherently collaborative and teens already use their devices for social networking and collaboration, these devices can easily be used for collaborative activities in classroom (Vygotsky, 1962, 1978). Kukulska-Hulme and Shilled (2008) documented students, peers, and teachers using the voice recording functionality of their phones in classroom activities. Berry and Westfall (2015) also cited the potential for using students' mobile phones' voice or video recording capabilities for interactive class activities.

Mobile phones can also be used for interactive, teacher-led classroom activities that go beyond the basic functionality of the devices. Hartnell-Young and Vetere (2008) reported on a study in Australia where students were given mobile phone cameras to record their everyday lives to later share in school. The students used their devices to capture and create stories that amplified their voices and personalized the project in ways that would not have been possible with non-multimedia platforms. In another study with older students, researchers assigned teams of students to take group selfies of themselves in response to prompts as part of team-building and academic exercises (Johnson et al., 2014). The researchers found that employing mobile phone-based group selfies for educational purposes proved effective and impactful in part because the assignments met students where they were by leveraging their personal technologies and positive attitudes towards selfies.

Other researchers have also explored other ways that mobile phones and their related applications can be used to support student learning. The Oneville research study investigated how student-teacher texting could impact student engagement in school by

equipping teacher counselors with a Google-Voice messaging app and observing how the teachers interacted with their students via text messaging to provide information and support (Pollock & Amaechi, 2012). Orthober and Thomas (2011) described ways that texting can be used to assess student knowledge and performance through online assessment tools such as *Poll Everywhere* that replace physical clicker devices and allow teachers to instantaneously poll their students during class. Augmented reality, a technology that allows users to overlay information over what is seen through a phone's camera, has been studied extensively in learning and classroom contexts. Kamarainen et al. (2013) demonstrated how augmented reality software on mobile phones coupled with environmental probe-ware could be used to increase student engagement and deepen learning from an outdoor ecosystem project. Most of these studies cited an increase of student engagement as one of the major strengths of integrating mobile phones into the classroom curriculum. Thomas et al.'s 2013 survey of classroom teachers found similar benefits. About half of their participants agreed that mobile phones could increase students' engagement. A quarter of their participants also felt that these devices could increase student motivation. As previously discussed, engagement and motivation have been recognized as necessary elements of student learning (Lepper & Henderlong, 2000; Williams & Williams, 2011).

Although the research cited illustrates the potential benefits of integrating mobile phones into learning, many challenges to these proposed integrations exist in districts, schools, and classrooms across the nation. These challenges range from issues of equity and access (if 88% of teens report having a cell phone, then 12% did not; the percentages vary from community to community), to safety and privacy issues (sexting and

cyberbullying are both facilitated by mobile phones), to teacher preparation and preference (Lenhart, 2015; Siegle, 2010; Thomas et al., 2013). I will review some of the research addressing the latter two categories—as those are two of the more strategically significant challenges to understanding whether and how to integrate mobile phones into the classroom.

Challenges to Mobile Phones in the Classroom

The early arguments against mobile phones in the classroom focused on their ability to distract students and teachers when they rang. Although the ringing would be extremely distracting, the sound also made it quite easy for a teacher to identify and deal with the phones' owners. As mobile phones have morphed into smartphones and communication has transitioned from voice to primarily text-based, it is no longer as easy to identify a covert mobile phone user, and the distraction is less obvious and more localized (Berry & Westfall, 2005).

The phenomena of students stealthily texting and engaging in social networks during class is not merely a hypothetical bogeyman, however. Numerous researchers have documented the regular clandestine use of mobile phones in the classroom and the negative effects that these uses often have on learning. Indeed, students regularly admit to using their phones for these purposes in the classroom (Bayer Klein, & Rubinstein, 2009; Besser, 2007; Kennedy & Smith, 2010; Rubinkam, 2010). Some of these students argued that using their phones during class did not distract them and that they could multitask (Ellis et al., 2008). However, a series of research studies dating as far back as 2003 suggest that this type of multitasking in the classroom can indeed negatively impact attention and retention (Ellis et al., 2010; Fried, 2008; Fox et al., 2009; Hembrooke &

Gay, 2003; Kraushaar & Novak, 2010). In a 2010 study, Krasuhaar and Novak (2010) found an inverse relationship between disruptive multitasking and several types of student performance. These findings echoed earlier studies that found that students were often distracted by their class laptops (Pembroke & Gay, 2003; Fried, 2008).

If student in-class attention and performance can be so negatively impacted by their clandestine use of their phones, why do they continue to text? A 2010 study by Wei and Wang posited an explanation. The results of the researchers' quantitative analyses found that students' text messaging during class was positively related to their regular (non-class) texting, and that the students' declared motivation to learn and their teacher's attempts to regulate their in-class texting did not significantly affect their ability to limit their texting during class. The upshot is that students text in class because they are accustomed to texting in their daily lives, and the class is merely an extension of those lives.

These researchers' findings that neither teacher input or nor student-declared motivation significantly affected the students' use of mobile phones in the classroom is supported by another set of findings about students' response to teacher reprimands for phone use. Berry and Westfall, in their 2015 study of college students and faculty, found 80% of student using their phones regularly in class. The study also found that students who were reprimanded by their teachers for phone use were less likely to change their behavior than students who were not reprimanded, and for the few students that would change their behavior accordingly, those behavior changes did not change outside the specific classroom (Berry & Westfall, 2015). In short, students generally found their teachers' policies to be largely ineffective.

Teachers Respond

Teachers are not a monoculture when it comes to engaging with mobile phones in their classrooms. Some teachers take a more prohibitive approach (irrespective of effectiveness) to mobile phones in their classrooms. Others are more permissive and creative with regard to when and how these devices are allowed and used in the classroom. In his 2014 paper published in the Journal for Teachers of English as a Second Language in Canada, Brown attempted to formulate a theoretical framework that describes different levels of mobile phone acceptance by teachers in their classrooms. Brown extracted his framework from his review of the literature on phone use in the classroom and described a spectrum of nine approaches that teachers can take with respect to dealing with mobile phones in their classrooms. I describe three of these approaches here—one on each end of the spectrum and one in the middle. On the most restrictive end of the spectrum are teachers who take a principled stance that universally prohibits mobile phone use in their classroom. Brown labeled these type of teachers as *prohibitionists.* In the middle of his spectrum, he described teachers that had no classroom policy at all about mobile phones in the classroom. These teachers behaved like either mobile phones did not exist, they were not used in their classroom, or that their use did not impact learning. Brown labeled this approach as *ostrichism,* or putting one's head in the ground and ignoring the issue. At the other end of the spectrum, Brown described teachers that embraced and encouraged student use of mobile phones in their classrooms. These teachers, whose approach he labeled *permissivism,* employed a social justice approach and believed that students were digital natives for whom their mobile phones are essential. Consequently, the teachers believed, these students could only

thrive when using the technology that they had become accustomed to using in their everyday lives (Brown, 2014; Prensky, 2005).

These teacher responses to mobile phones in the classroom parallel strategies identified in research literature investigating how teachers integrate new district mandated pedagogical policies into their classroom practice (Coburn, 2004; Jennings, 1996; Reimer, 2002; Spillane & Jennings, 1997). One 2004 study of teachers' classroom practice suggested that teachers often used one of three different strategies to decouple their classroom practice from district mandates (Coburn, 2004). Some teachers would employ a *parallel structures* strategy where they would alternate between district-mandated strategies and their previous strategies as they saw fit. Others would *assimilate* the new strategies into their existing strategies creating a slightly altered approach grounded in their personal strategy. A third group of teachers would *accommodate* the new practices and substantively change their previous approaches to fit the new policy mandates. As with the Brown (2014) taxonomy, these strategies can also be seen to vary by the level of the teachers' flexibility to respond to external demands.

Although teacher and student philosophies and creativity are important in determining how students' mobile phones are used in the classroom, other structural factors can have real impact on classroom device use. In their book for educators, *Security vs. Access: Balancing Safety and Productivity in the Digital School*, Robinson, Brown, and Green (2010) suggested that schools should take a deliberate approach to understanding the benefits and challenges of using these devices in the classroom, and must then take the same approach to educating teachers on these uses and challenges. The potential threats created by the use of these devices, they argued, are real and need to be

acknowledge and addressed. Only a deliberate and concerted effort to acknowledge, learn, and train teachers can prepare a school to allow these devices in their classrooms (Robinson, Brown, & Green, 2010). Furthermore, beyond educating teachers, districts must educate students and their parents on expectations around use and support. All of this must be enshrined in flexible, clear, and transparent policies that can be supported by both broader district and more specific individual classroom policies (Garcia, 2012; Robinson, Brown, & Green, 2010). While teacher philosophy and attitude is important, successful classroom implementation will be challenging without a support and policy framework provided by the school and district.

Districts Respond

Schools cannot dictate policies in a vacuum. Districts can have a significant impact on school policies by exercising differing levels of control on the policies of their individual schools. As districts attempt to respond to the challenges created by the influx of mobile phones into schools, they must create policies that address not only the academic and social demands, but also the legal demands around student protection and safety (Lemke et al., 2009). These policies must be flexible enough to adapt to the fast-changing nature of these technologies and the unique needs of different school populations, yet firm enough to establish commonality between schools (Lemke et al., 2009).

According to a guide created by the Consortium of School Networking (CoSN) in June, 2011, district Information and Communication Technology (ICT) policies often have two goals, first to protect students and second to enable them to access online resources for learning and teaching. Some policies focus more on one goal than the other

and some are extreme rather than moderate in their views (Garcia, 2011). Those that focus more on protection subscribe to a theory that the Internet is dangerous and that students need to be protected online from inappropriate and dangerous content, as well as people that might seek to harm them. Those districts that focus more on enabling access base their policies on the premise that children should learn to be responsible users of the Internet and citizens of an increasingly connected world (Bosco et al., 2011; Garcia, 2011).

In their 2009-2010 report, the Massachusetts Educational Technology Advisory Council took a similar view of the policy creation landscape underscoring the spectrum of district focus spanning protection to learning (EdTech Advisory Council, 2010). The task force argued that, while providing a safe and secure environment is essential, that goal must not prevent students from acquiring essential 21st century skills that require knowledge, familiarity, and confidence in using online content and structures. School policies must balance protecting the students with flexibility that allows them to experiment and learn. This recommendation is supported by the large body of research citing the centrality of mobile phones in student lives and the inevitability that students will use them in classrooms, and the body of research highlighting the immense potential of mobile phones to augment and support classroom learning.

A 2014 Horizon report produced in collaboration with CoSN extolled the benefits of mobile phones in the classroom in its discussions about intuitive technologies, personalized learning, and Bring Your Own Device (BYOD) policies (Johnson et al., 2014). The overall conclusion from these discussions was that mobile phones—smart phones in particular, because of their intuitive interfaces and expandable application

software—allow students to personalize their learning. According to the report, BYOD policies empower students, like they do adults in the workplace, to choose and use the tools (devices and apps) that make them most efficient and effective. By giving the students more control over how they learn, the report argued, these types of policies give the students ownership over their learning—essential to motivating and personalizing learning. Much like the 2010 Advisory Council report, the authors in the Horizon report called out the safety of student data as a difficult challenge that would prevent the adoption of BYOD and other tech-related policies. The authors discussed the dangers of even school and district approved cloud service providers accessing student information. After a discussion of the legal framework that would protect student data, the report ultimately suggested that administrator transparency about privacy policies and processes, and about student and teacher education on selecting amenable technologies, was the only way to ensure student-data safety. This recommendation for transparency and education potentially could conflict with the push for greater personalization and student choice in devices and technology. The challenge of balancing student safety with technological flexibility remains.

This review of current literature found abundant evidence suggesting that high-school students have become extremely attached to their mobile phones and insist on bringing these devices into schools and classrooms irrespective of district, school, and teacher policies. The literature also offered explanations as to why students are so insistent on bringing their mobile phones into classrooms—the devices in part can be used by students to compensate for the lack of motivation and relevance that many experience in their classrooms. The introduction of these devices into the classrooms,

however, often negatively impacts student learning. Finally, the literature suggested that although there are plenty of educational uses for these devices and indeed, that some schools and teachers have endeavored to engage students and their devices for learning purposes; considerations such as student safety and the protection of student data, and policies based on these considerations often work against attempts to explore these educational uses.

While this literature provided insight into the perspectives of the different stakeholders involved in deciding how mobile phones are used in the classrooms, these different perspectives are often distributed across multiple studies. Few studies provided a comprehensive investigation of the nuanced process of policy creation, formal implementation, and classroom experience. Such a comprehensive examination would provide insight into how different stakeholders in a system interact with each other to create actual classroom policies. In light of this review, my study aimed to explore these nuanced processes around the development, communication, and negotiation of district, school, and classroom mobile phone policies.

CHAPTER 3: RESEARCH METHODS

Research Questions

Mobile devices are in the classroom whether principals and teachers want them or not. Districts and schools have taken numerous approaches to governing, and sometimes leveraging, these devices for learning. By closely examining six classrooms in two schools in two school districts that were wrestling with these devices, this study aimed to understand the lived experiences with mobile-device policies and use in schools. The study also endeavored to identify effective approaches that districts and schools could take to decide whether and how to support the use of students' mobile devices for educational purposes. To effectively identify successful approaches, the study sought to answer the following questions:

1. How do classroom practices regarding mobile devices compare across different district and school policy contexts?
2. How do students', teachers' and administrators' perceptions of these practices compare across different district and school policy contexts?
3. How do students', teachers', and administrators' perceptions of the potential for mobile technology use for learning/education compare?

To answer these questions, I conducted a series of semi open-ended interviews with a selection of administrators, teachers and students at two different schools with different policies governing mobile device use in classrooms.

Site Selection

During the 2013-2014 and 2014-2015 school years I conducted a series of interviews with samples of administrators, teachers, and students at two different schools,

one in Cambridge and one in Somerville. My review of the relevant literature suggested that student mobile phone ownership varied by race. Consequently, in an effort to reduce any confounding effects related to differing races of potential student participants at the two schools, I chose two districts with similar racial demographics (Patton, 1990). The two towns neighbor each other and are located just north of Boston. Both districts are in smaller urban centers and have majority minority student populations. More than 64% of Somerville students are racial minorities—with Hispanic (42.8%) and Black (10.3%) being the largest minority populations. In Cambridge, whose white student population is slightly larger than Somerville's (39.8% vs.36.3%), 60% of students are minorities, though the Black student population (26.5%) is larger than the Hispanic student population (12.5%), almost flipped in comparison to Somerville's ratio.

Despite the similarities in their minority populations, the two cities are quite different socio-economically. In 2014, Cambridge's average per-capita income of $54,000 was almost twice that of Somerville's $29,000. Cambridge's per pupil spending was similarly larger than Somerville's at $27,000 versus $17,000 (Massachusetts DOE, 2015). This disparity in the economics of the two cities would suggest that the Cambridge students would be from higher-income families on average and that the Cambridge school would be more highly-resourced.

The districts also differed in an important way with respect to this study. Although both districts allowed their schools to decide their mobile phone policies, the two schools in question took very different approaches. While the Cambridge school allowed individual teachers to decide their classroom policies, the Somerville school established a universal policy that (in theory) governed all the classrooms. This

difference in school policy allowed me to compare how teacher, student, and administrator beliefs and behaviors varied across different policy settings.

Finally, the two schools varied in school structure and focus. While the Cambridge school was a traditional house-based high school with four houses and 1800 students, the Somerville school was an alternative school with only 77 students across the middle and high school, which are housed on one floor of the same building. The Somerville school was *alternative* in that the students at the school were typically at risk of dropout and had not been successful in traditional schooling. They had flexible schedules and smaller class sizes, attending counseling groups at least twice a week. Additionally, each student was assigned a counselor that kept close tabs on them.

Participants

I used a snowball sampling method to select participants at both schools. I aimed to achieve a representation of administration, teachers, and students to present different perspectives on the same events. I also aimed to include a selection of students connected with each teacher in the sample. The goal of including these varied perspectives across the system was to help understand the level of alignment and coupling (loose/tight) across the different levels of a multi-level system.

I first selected district-level administrators by seeking out people who (a) were knowledgeable about and/or involved with technology-use policy creation, and (b) were willing to be interviewed. I then sought out the school-level administrators that were involved in writing, creating, and implementing school technology-use policies. I found these administrators by asking district administrators and school principals what school-level administrators were involved in creating and/or implementing technology use

policies. For teacher selection in Cambridge I asked school administrators for the names of teachers that they thought represented a variation of experience and interest in mobile phones in the classroom. I received five initial recommendations, but only received responses from three teachers. In Somerville, I received four recommendations and was able to gain access to three teachers.

I sequenced the interviews so that I interviewed administrators first, then teachers, then students according to the interview protocols presented above. I summarized general findings after interviewing each group. This sequencing and summarizing allowed me to inform interviews with members of the latter group with preliminary findings from prior groups. I was then able to structure my probing questions to explore, corroborate, and challenge specific assertions and general findings from the interviews with the prior groups. I also sequenced the interviews so the Somerville interviews were conducted first, with the Cambridge interviews coming after. Similar to the dialoguing between the data from the different stakeholders at the same schools, I used the data from the first set of interviews in Somerville to refine my questions for the Cambridge participants.

In Somerville, I interviewed two district administrators and one school-level administrator. I also conducted interviews with three teachers at the school—two who worked primarily with high school students, and one who worked primarily with middle school students but maintained relationships with her former students that were currently in the high school. I interviewed seven students, five who were in the high school and who reported taking classes with both of the high school teachers, and two who were in the middle school. Teacher and administrator interviews lasted between 30 and 45 minutes. Student interviews lasted between 15 and 30 minutes.

At the Cambridge site, I interviewed four district-level administrators and one school-level administrator. I also interviewed three teachers and three students for each of the three teachers for a total of nine students. As with the Somerville interviews, teacher and administrator interviews lasted between 30 and 45 minutes, while student interviews lasted between 15 minutes and half an hour. Although these interviews may seem brief, they proved quite informative. I made an effort to limit my questions to short prompts followed by brief follow up or guiding questions when students veered off on a tangent. Consequently, the majority of the time in each interview was filled with the participants' responses. Finally, although the students' responses ranged between 15 and 30 minutes, the majority of the student interviews (14/17) lasted closer to 30 minutes.

Administrator interviews were conducted in the administrators' offices and with no one else in the room. Teacher interviews were conducted in teachers' classrooms. Students and other teachers occasionally entered the classrooms during these interviews. Student interviews were conducted in a separate classroom or in the school hallways where the student could be away from other students. When student interviews were conducted in a hallway other students would occasionally walk by but were never engaged by the investigator or the student. Interviews were started with a short introduction of the investigator and the general goals of the study. Participants were then engaged in discussion about their class or their day in an effort to establish a more informal atmosphere. The participants were asked if they had any preliminary questions. The interviews were conducted according to the attached semi-structured interview protocols tailored for each set of stakeholders (see Appendices C through E) with slight variation in language to (a) respond to the participants' manner of speaking and continue

the informal rapport established at the beginning of the interview and (b) emphasize any aspect of the questions that the participant might not be addressing. All interviews were recorded using a laptop or iPad and an iPhone for redundancy. I transcribed the recordings and appended my field notes for each recording into an Excel spreadsheet that was then entered into the qualitative analysis software, Dedoose, for subsequent analysis.

Data Analysis

Before analyzing the interview data, I reviewed district and school policies in both districts. Each district had acceptable use policies that set the rules for all electronic devices that operated on their networks. Each school had its own set of policies, detailed in its handbook, that governed student use of electronic devices in the school. I also reviewed the schools' websites to gather any additional relevant information that was not provided in the policies.

I analyzed the data using a grounded theory methodology (Charmaz, 2006; Lofland, 1995). First, I analyzed the transcripts using an open coding process to identify major categories or themes that emerged from the data (Bogdan & Biklen, 2013; Huberman, 1994). I then coded the interviews using a set of etic codes drawn from my review of the literature and research questions. These etic codes addressed the interest of the different stakeholders as well as system-level phenomena. Examples at the stakeholder level included *motivation*, *student-directed use, educational use, non-educational use*, and *teacher-directed use.* Examples at the system level included *alignment, coherence, disconnect, support,* and *autonomy.*

I then analyzed how each group (teachers, students, and administrators) interpreted their own and the other groups' understanding and use of social media, and

how they explained their use of social media. In conducting the analysis, I paid particular attention to cultural (culture of the school or district), structural (structure and process for making and communicating), and legal (legal requirements driving policy) arguments and explanations; and the rules and policies that they described as promulgating or defying.

I employed the multi-case study methodology as presented by Stake (2006). I first created separate cases for each school and district. According to Gerring (2004), a case study is "an intensive study of a single unit of the purpose of understanding a larger class of [similar units]" (Gerring, 2004, p.342). Cases are ideal for studying variations in relationships between objects within a system at one point in time (synchronically) or over time (diachronically). My initial analysis of each school was conducted in the form of a self-contained synchronic case study. In writing the case study for each district and school, I was able to analyze the variations in beliefs and actions across the multiple stakeholders. The methodology assisted me in first understanding the context, and afterwards, the interplay of espoused and enacted values and beliefs across the different stakeholders in each district.

After gaining a deeper understanding of the dynamics of each site, I was then able to more effectively compare and contrast the policies, perceptions, and practices in the different learning environments (Stake, 2006). The multi-case (or here, two-case) study approach is useful for closely examining and understanding complex systems that occur in different locations (Stake, 2006). In my analysis, I explored the similarities and differences across the two different cases with respect to my two research questions. The following section contains the individual cases and the cross-case analysis. The paper concludes with a discussion of the implications for practice and further research.

CHAPTER 4: CASE STUDIES

Cambridge Rindge and Latin School

Cambridge Rindge and Latin School (CRLS), Cambridge's one high school, enrolls 1,864 students in ninth through twelfth grade and had a 92.5% graduation rate in the 2014/2015 school year. The high school is located right behind Harvard University and Harvard Square, and its newly renovated high-tech campus abuts the city's modern central library. On first glance, the campus could easily be mistaken for belonging to one of the numerous private schools in the greater Boston area. However, the school's diverse population of students differentiates it. Almost 33% of the high school's students are African American; another 13.4% are Hispanic.

Cambridge Public Schools serves over 6,600 pre-Kindergarten to twelfth grade students. About 47% of the district's students are considered high needs (somewhat higher than the state average of 44%). Of the students, 28% are considered economically disadvantaged, which is about the state average. Although white students represent the largest population (38.5%), a significant percentage of Cambridge Public School students is African American (29.7%), Hispanic (13.7%) and Asian (11.8%). Cambridge has one of the highest per-pupil expenditures of any school in the country at over $27,000 per student, almost double the state average of $14,518. All three teachers interviewed have worked at the school for at least three years and have experienced the encroachment of mobile phones into the classrooms. The administrators in the study were also veterans in their positions.

Cambridge Acceptable Use Policy

Although there are examples of more progressive school districts crafting acceptable use policies that focus on the benefits of ICT in teaching and learning, typically, acceptable use policies are focused on preventing harm to students or abuse of the district's network. The Cambridge Acceptable Use Policy (2011) falls squarely in the prevention of harm and network abuse end of the spectrum. A portion of the policy reads:

> While there are many valuable resources on the Internet, there also are many sites that can be considered inappropriate for students and serve no educational value. The Cambridge Public Schools Computer Network and Electronic Devices are established for a limited educational purpose, and have not been established as a public access service.

Although the above statements acknowledge the educational purpose of the district's technologies, the bulk of the policy focuses on restrictions and prevention. The policy states that the use of devices—whether school provided or non-school-provided but on the network— "is a privilege and not a right." These devices "should only be used for business and/or school purposes" and then only "in a responsible, legal and ethical manner." The policy then details behaviors and uses that would fall under non-school or business; or non-responsible, illegal, and unethical uses.[1]

The Cambridge Student Handbook

The CRLS student handbook is made available to students at the beginning of each school year via the school's website (see Appendix H). If a student breaks any of these codes of conduct detailed in the student handbook, he or she will be disciplined.

[1] There are 12 behaviors and uses listed. The behaviors and uses can be grouped into four categories: political lobbying, illegal uses, uses negatively impacting learning or safety, and uses that compromise privacy. Retrieved from http://bit.ly/1WQqF0k

The first offense would result in a warning, and subsequent offenses would result in confiscation of the device with the return predicated on increasingly serious consequences ranging from detention to meeting with the students' parents or guardians. The high school's overarching policy on "electronic devices such as cell phones and headphones" is that they can be used between classes and during lunch time in the cafeteria, and in classrooms when permitted by the teacher. Similar to the district's acceptable use policy, the handbook then details the behaviors and actions that constitute "inappropriate use of the technology" such as cheating, inciting or promoting fights, and harassment/bullying. Last in the list of violations is the statement, use of device "In a class without explicit teacher permission." Taken together, the CRLS policy then allows the use of personal technologies (a) during passing time, (b) during lunch, and (c) in the classrooms when explicitly permitted by the teacher.

Cambridge Administration and Teachers' Responses

The existence of two sets of complementary policies—the acceptable use and school-level policies—is broadly understood by all administrators and faculty participants. The district's head of Information Technologies (IT) explained that although there is a school department-approved policy document, each school had its own school-based procedures that were determined by the school principal and a selection of teachers to support the policy. It is these polices that govern "what's allowed to be done on personal devices." He cautioned, however, "that doesn't mean that a principal has to allow the use of personal devices." Indeed "principals are now saying it's up to the teachers." Each school's principal could decide how personal technology devices were to be used in their schools. The deputy superintendent agreed and added that "There's an

understanding that [the students] are young adults and will have the technology with them. But it was up to the teacher to allow [the technology] in their classrooms." Although she had noticed "no phone policies" in the district's elementary and some of the middle schools, she had also observed that over the years "more teachers understand that since the tech is already [in the classrooms] they had to figure out how to use it for educational purposes…What we have to do is make sure that the use is clearly of instructional purposes."

According to one district administrator involved with policy creation, the district wanted to support teachers in welcoming the students' personal devices into their classrooms. However, she wanted a level of rigor and diligence to guide the use of these devices. "What's the purpose? What's the intention? Is it because the child wants to write their homework? There are lots of different issues." As set out in the Acceptable Use Policy and student handbook, the classroom use must satisfy certain safety, legal, and propriety guidelines. Although "the district's policy is to be as flexible as possible when giving students access to education" she explained, the district had to do this "while staying within the law." She was conflicted about the potential and use of personal technologies in the classroom and worried about negative side-effects. "Sometimes people with technology get too casual-whether it's text or Facebook or anything else. They have to remember who they're communicating with." Although she was familiar with ongoing debates about BYOD policies her overriding concern was of protecting student data. To this last point she explained that relevant discussions about what was considered school data, and what could be on students' and faculty members' private devices, were constantly being held at the district level.

A significant part of this safety and privacy orientation was the vetting process that all classroom software must go through—whether for school provided technology or software to be accessed in class by students on their personal devices. Part of the district's privacy policy required software used by teachers and students to protect student data according to specific guidelines. The Chief Information Officer suggested that without a common student data system that maintains all student data from different applications, that classrooms would like to use "every single application [that teachers request to use in their classrooms] was literally weeks' worth or work" to get it to work with the district's systems and comply with their data policies. He explained that the teachers were not aware of this compliance need. "People always ask 'why can't we let things go when other places do it?'" Although they allowed faculty and staff to use their personal devices, district administrators still needed to protect student data and their process of vetting software allowed for that. Part of the process involved ensuring that any application used by teachers did not create "content considered to be part of the student record" and that was connected to students' names. To ensure this, teachers were required to submit to IT department for approval any app or website that they wanted to use in class.

An English teacher at the school illustrated the conflict that often arose when teachers' wanted to use software that conflicts with the school and district's policies. "Cambridge thinks it can protect everyone from everything." This teacher argued that the department's requirements around what software could be used in classrooms stymied her teaching efforts. She suggested that the software situation was emblematic of larger

issues of resistance created by the district and its legal department with their focus on protection.

Although she disapproved of certain aspects of the policy, the teacher did approve of the policy allowing the schools to decide their own policy and the high school's decision to allow individual teachers to make the policies that govern their classrooms instead of mandating a school-wide policy. "People have different levels of tolerance," she stated. "Some teachers listen to music while they're working and let kids use music while they're working." That is, both students and teachers work and learn differently and provisions should be made that acknowledge and make space for their differing styles.

One of the school's art teachers followed on this theme of flexibility between classes. "Teaching kids that the world is the same everywhere is madness. You just have to let the kids know how to use [the phones] in different contexts and adapt to different contexts." Her strategy was to deal with each student individually when addressing phone use that she doesn't condone. "Sometimes I have private conversations with kids so [the other kids] might not be aware of how strict I can be [about any student-initiated non-educational phone use in the classroom]." Other times "[She] will hang out behind a student to make them aware that [she's] there; they usually take the hint." The teacher suggested that these one-on-one interactions were usually sufficient to "redirect" the students to stop using their phone "rather than have a big freak-out over taking the phone." But, she maintained that she did not bother with these redirects every time she saw a student with a phone. "As long as the kids are getting their work done, I don't mind how they use their tech… if breaking the rules might help the class, then I'm okay with

breaking them." Indeed, she "would describe [herself] as ADHD" and as such empathized with what she identified as the students' need to regularly check their phones. In general, she endorsed student-initiated non-educational phone use in her class as long as she felt that the use did not materially affect the student's academic work. "If it takes you two seconds to send a quick text to get the distractions out, then that's fine…It's not a sweat shop; it's a win win."

While the art teacher took a nuanced view on her approach to dealing with students' use of cell phones in her classroom, she acknowledged that "some of [my] students might find [me] too permissive." She recounted that some of her students told her that they were surprised that "she [didn't] make a big deal when they're [in extended text conversations]"—implying that some of their other teachers did.

The math teacher interviewed held a different view on mobile phone use in her classroom. She believed that phones were generally distracting, that they were mostly used by her students for non-educational purposes, and she did not want them in her classes. "It's near impossible to focus on both phones and instruction." At the beginning of each class she would ask the students to put their phones away. If she saw a phone out during class she would tap on it to indicate to the student to put it away. Part of the reason she had her "no phone policy" was because she worried that the phones would get stolen while in her possession—something that had happened a few times in her classes. Despite her efforts, the teacher felt somewhat ineffective and compromised in her efforts. She noted that in one of her classes "[the students] got used to charging their phones" which made her uncomfortable. Although she would regularly instruct the students to put their phones away, she felt compromised because her co-teacher charged his phone

during class as well. Between her co-teacher and other teachers who allowed mobile phone usage in their classrooms she felt that there was not much she could do to curtail the students' usage. Indeed, she believed that some of her students might consider her to be more lenient than some of their other teachers. "It would take 100% of my energy to just focus [on managing] phones…I could be better about it, but it's so frustrating to focus on it." In that vein she mentioned sometimes allowing the students to use their phones for non-educational purposes such as texting and going online for non-class related reasons during the "review" part of class to "keep things quieter." She believed that the school needed to more strongly support teachers in managing students' cell phone use. "Honestly, I feel like there should be a zero tolerance policy...until the school takes a harder stance, it's a losing battle."

The other teachers in the group also acknowledged this alternative view that students' technology should not be in the classroom. The art teacher who enthusiastically supported the teachers' choice policy and advocated for nuanced interaction with students, acknowledged that other teachers held very strong contradictory views. She mentioned getting into arguments with other teachers about the use of phones in schools. According to her, some of these teachers strongly believed that "mobile devices have absolutely no place in the schools and can't believe that kids can use [them]."

The English teacher who suggested that "people have different levels of tolerance" in support of the teachers' choice policy also acknowledged how the policy might not work for all teachers. "You have to think that somewhere in the building kids aren't listening to their history teachers because they're on Facebook and the teacher doesn't feel empowered to stop it." This idea of empowerment resonated with the math

teacher's frustration and appeal to school administration for support. The district Chief Information Officer also believed that the ability to adequately monitor and direct students' use of mobile phones in their classrooms depends heavily on teachers' broader ability to manage their classrooms. "It falls on the teachers and their knowledge of tech and how to use tech." He suggested that younger teachers might be more successful in integrating the use of the students' personal devices into the classroom for student-initiated as well as teacher-led educational purposes because, according to him, of their higher level of comfort with these devices. It must be noted that this assumption somewhat contradicted the math teacher—the youngest teacher in this study—who wished to exclude personal devices from the classrooms.

Cambridge Policy Communication

The administrators. Although the teachers and administrators broadly agreed on what the actual policy was, they agreed less on how the policies were created and how they were actually communicated to faculty and staff. According to the one district administrator, there was no set schedule for reviewing the policies. In one instance she initiated a review of the policies because she found outdated language that she felt needed to be updated. However, there were other ways to prompt policy review. "Usually what happens is that a concern in expressed by the public." In some situations, high school students could also have input on policies by presenting to the school committee, communicating policy information to the student body and bring feedback to the committee. One example that was obliquely referenced was a recent event involving a teacher at one of the elementary schools. The teacher was accused of inappropriate behavior involving technology that resulted in the teachers' dismissal. The district used

this event as a learning movement to spur the review of related district policies. Another administrator observed that the incident "triggered changes in the policies, but did not necessarily change how the policies were reviewed."

The administrator noted that since the previous superintendent, principals had been highly involved in the policy creation and review process. Now when a draft policy was created by the superintendent's cabinet in response to a school committee or another party's request, it would be taken to a full principal's group that met monthly—or a task force from that group—for review and feedback. These principals were then charged with communicating the changes back to, and at times soliciting input and feedback from, their faculty and staff through trainings that occurred at the beginning of the school year. It was through this communication channel that the district administration had become aware of some of many of the challenges that teachers and school administration were facing in their schools and classrooms.

The two administrative members of the ICT department also weighed in on the communication process. These two administrators described a regular dialogue with a third district administrator through which requests and challenges coming from the schools were communicated to the district policy makers. According to the Chief Information Officer, "As mobile technologies became more prevalent… as kids started bringing the mobile devices in [to the schools and classrooms], the policies were usually created usually because of incidents..." such as the recent aforementioned case in which a teacher was caught with compromising pictures of students on their phone. The Assistant Director of Educational Technology was more specific and explained that her department reviewed the district policy with the legal department at least six times a year. "I'm

constantly sending new stuff that's vetted and constantly pushing her to think about procedures they have in place."

The teachers. The teachers did not experience the same level of inclusion as the administrators. While they agreed that the policies were often amended in response to incidences that occur at the schools they felt that they did not always have a clear voice in policy making and review. They were aware of annual policy reviews that involved Deans of Students and, at times, subcommittees of teachers; the policy to allow mobile phones in the hallways, at lunch, and in the classrooms as allowed by teachers was a result of one such policy review. Although the English teacher would have liked to be involved in such a comment process that involved more stakeholders beyond administration, "it comes down to time-to not having time to get [a policy making process] together." She felt that the district somehow did not want an inclusive process. The math teacher also mentioned "after school meetings where you discuss things" relating to policy, although she did not mention participating in them. Similarly, the art teacher remembered receiving emails about joining committees to create and/or review policies, but she explained that she was too busy to participate.

Beyond a perceived lack of inclusiveness, some of the teachers felt that the policy process was often too slow and not as responsive as it could be. The English teacher felt stymied and unsupported with respect to the district's restrictions around what software could be used in the classroom. She also felt that the district only responded to major issues and not necessarily to endemic teacher challenges. "There has to be a problem before a policy is changed."

Finally, some of the teachers argued that even when policies were finalized, they were not always communicated clearly. The math teacher lamented that "academic polices sometimes just come from the administration" and often "the school is really awful about letting us know what they are." Although other teachers reported, and the administrators confirmed, receiving the policies at the beginning of the year, the math teacher claimed that she could not remember being told about the policies by the administration and had only learned the policies from veteran teachers. The art teacher also identified a communication problem. "The only constant in Cambridge is constant change," she explained, suggesting that although the polices had changed over the years those changes were not communicated as clearly as necessary.

The students. All of the students interviewed generally agreed on their interpretation of the school policy around cell phones. As stated by the administration and teachers, cell phones were permitted in the hallways and during lunch, however usage in classrooms was left to the discretion of the teachers. Their reports generally corroborated their teachers' statements regarding the variability of classroom policy from teacher to teacher regarding mobile phone use and teacher enforcement. Generally speaking, the students reported three groups of teachers.

First, there was a group of teachers that preferred that students not use phones at all, for educational and non-educational purposes alike. As one student put it, "My understanding of the policies is that unless a teacher explicitly tells you that cell phone use is okay, then it's not allowed during class." Second, there was a group of teachers that allowed students to use their phones for educational purposes, and even for non-educational purposes, as long as they felt it supported the students' learning. Such more

passive uses ranged from listening to music, to taking pictures of classwork, and/or homework. And third, there was a group of teachers that created activities that actively engaged the students' mobile phones in teacher-initiated and teacher-led classroom activities.

When asked about classroom policies, the students tended to focus their initial responses on those teachers that did not permit them to use their phones in the classrooms for non-educational and educational purposes. One student reflected, "Depends on the teacher. My history teacher does allow phones." Her English teacher also did not allow them to use their phones in the classroom because "she just said it's distracting." The student then confirmed the classroom procedure outlined by administrators referring to her teacher, "She'll give you like two warnings, then will take it and put in one of the little containers. If she gives you more than two warnings, then she'll give it to your dean and you'll get it at the end of the day."

Another student elaborated to explain her inferred understanding of her teachers' rationale,

> In some classes you can't use your phone, so I have no choice…Some teachers are really strict about the phone policy in their classroom. They feel like as teens with Facebook and Instagram distracting them, if they allowed phone use we won't do any of their work.

One student in the English teacher's class blamed the teachers' unwillingness to allow phones in their classrooms on the culture of phones: "…because of the culture of phones; they can be distracting and unproductive." Words such as "culture of phones," "distracting," and "unproductive" suggested that although the teachers prohibited all

mobile phone use in their classrooms, the policies were aimed primarily at preventing their students from using their phones for non-educational purposes. A third student agreed that "teachers don't like phones, I think," and added that she did not know any teachers that would condone any cell phone usage in the classroom. However, she clarified that, "if they're talking or someone is giving a presentation, they'd be more angry than if you were doing group work and finished with your work."

Other students supported this more nuanced view of teachers that typically did not encourage mobile phone use in their classrooms. The student that earlier claimed that her history teacher did not allow phones later clarified that "...unless we're taking a quiz. After the test we can listen to music or play games." A student from the art class attempted to summarize, "If you're done with your work in class, or say that you're done, you can use your device to listen to music." Another student elaborated, "[The art teacher] is fairly no nonsense; she lets me [use my phone] because she knows how I work. But if she feels you're not working she'll get upset." Here, the student suggested that that teacher was accepting of student-initiated non-educational uses of mobile phones as long as she believed that the use was not negatively affecting the student's work. Although the students were quick to explain how teachers allowed them to listen to music and more generally use their phones, few mentioned receiving this explicit or implicit permission to use their phones for social purposes. Indeed, only one student mentioned receiving permission to text, and then only implicitly, "If you get an important text message you can check your phone, or use it for music…that's how the teacher is. As long as you're not on your phone constantly." However, many other students mentioned

using their phones for text messaging and social media, “If the class slows down I’ll listen to more music or send a Snapchat.”

We’ll investigate the phenomenon of texting and social media use further when we discuss the students’ arguments against banning phones in the classroom. One student in the art teacher’s class tried to find a pattern in the teachers’ decisions. “My experience in art class-you can kind of get way with using cell phones. But in class where hands-on activities are necessary for class, cell phone use is discouraged.” Apparently this student did not consider art a hands-on activity.

Mobile Device Use

Beyond allowing the students to use their devices for non-educational purposes when they completed their work, some teachers explicitly allowed, and often encouraged, the students to use their devices for educational uses during class. One student from the art class recounted how he used his phone for a teacher-encouraged, though not led, educational purpose during math class. “In math class my teacher will generally be okay with students having their phones out as a calculator.” This basic use of the phone as a calculator was reported by the majority of the student respondents. Another popular non-teacher-encouraged use of the mobile phone for an educational purpose was as a camera to record items. Students across all three teachers reported this use. One student reported “taking pictures of stuff I need to remember…” and also “writing in my notes… to-do lists and stuff.” Other students reported instances where their teachers asked them to Google a topic in class for an assignment they were working on.

In addition to describing student-initiated and teacher encouraged uses of mobile phones for educational purposes, students also reported teacher-led, class-wide

interactive uses of their mobile phones. One of the students in the math teacher's class recounted one episode where the teacher led such a project. "In math we were playing Manhunt. If you found an answer you had to take a picture and send it to her." He added that he could not think of any other such projects, "...that's it." Another student told of a project in his creative writing class where the teacher asked the students to write about their favorite song and describe the song in ways that a deaf person would understand. "The easiest way to do that was to bring your phone, pick a song and listen to it, and then write."

Although the students reported regular use of their phones for educational purposes: student-led, teacher initiated/encouraged, and to a lesser extent teacher-led; the most common use of students' mobile phones for educational purposes occurred outside of school—these student-initiated educational uses had mostly to do with homework. The uses ranged from more technical online research to higher-level production and writing of the homework. Of the first category of use (information retrieval) one student said:

> I get my homework and go to YouTube to find videos about how to do it.
>
> Sometimes I go on Google to look stuff up to help with my homework.
>
> Sometimes kids go to a website to get the answers for like honors class.

Another student claimed to use his phone to "look up words for [my] homework."

Other students reported using their phones to complete their homework using Google Docs and explicitly expressed their preference for using their phones instead of usually older or malfunctioning laptops. One student explained that she would regularly resort to this student-initiated educational use of her mobile phone, "if my computer isn't working." Another student used her phone at home for homework because it "helped

[me] focus and kept [me] away from the distraction of Facebook" on open windows on her older laptop. She described her laptop as "more of a desktop than a laptop" due to its depleted battery life. Consequently, she would often use her phone to type a few paragraphs on Google Docs to complete her homework.

Beyond substituting for laptops, some students used their phones for homework because of the flexibility afforded by the phones' portability. One student recounted, "if I don't have time to do my homework at home, I'll do it from where I am (on Google Docs)." Similarly, one of the students who occasionally preferred to use her phone at home explained that sometimes she would use her phone to finish her homework that was due later that morning "during the walk to school and print it out in homeroom." There were a few countervailing opinions about doing homework on mobile phones. "I can't do Google Docs in my phone. I could, but I'd have to download it, which is annoying and it requires more data and phone bill." For cost reasons, this student preferred not to complete his school work on his phone.

Another student wondered whether mobile phones could be used to replace textbooks. On reflection he thought that "the size of the screen [is too small]. Perhaps iPad screens would be better." Many of these student-initiated uses of mobile phones for homework connect directly to the student-initiated uses of devices for school work: taking pictures of homework, creating to-do lists, and looking up school work related information online. Indeed, many of the same students that reported using their phones for such purposes at school used their mobile phones for homework when out of school.

Many of the students were extremely vocal about their opinions of their teachers' classroom tech policies. There were two broad groups of responses. The first group

expressed understanding and sometimes empathy with the teachers' challenge. The second group boldly denounced the policies and their inferred rationale behind said policies. To facilitate understanding the various perspectives, the students can be divided into two groups. Those in the first group (3 out of 7 students) understood and agreed with teachers that prohibited phone use in their classrooms. The members of the second (4 out of 7) group understood the teachers' policies and rationale but nevertheless strongly disagreed.

The students that agreed with the teachers' rationale and policies made both practical—disruption and distraction—and ideological arguments about the benefits and effects of social media. A common refrain in the students' more practical explanations echoed these student's observations, "If people could randomly use their phones when they wanted, class would go so much slower and people would not pay attention." Another student, coming from a different perspective, expressed the same observation around the destructive potential of the devices. "If (students) are on their phones then the teacher has lost control…" A third student suggested that teachers ban phones because they were aware of "…the culture of phones. They can be distracting and unproductive."

One student, an outlier in the group, presented an ideological argument for banning the use of mobile phones in the classroom. "It's a social epidemic that I think is harmful…it places wireless connection above human connection and it's stagnating to social progress." "…I find more value in human connection"—suggesting that use of mobile phones interfered with human connection.

The students who disagreed with the teachers who prohibited mobile phone use in their classrooms generally presented two types or arguments. The first type argued that

students needed to use their phones and that mobile phone use did not disrupt class. "…It's not a good rule that you can't use [your phone] during class. Some teens focus better by listening to music…some teachers don't trust us enough with the phones. What if you get an important text message?" Another student from the art class took a more strident tone,

> Texting is not a privilege. It's just how we do things; and by not allowing kids to text you're depriving them of a perceived right. The Internet is a natural human right. Cutting off Internet access is a human rights violation.

The student later expanded on his reasoning explaining the perceived trauma of students not being able to use their phones during the 80-minute class periods. "People are so connected to things and it bothers people more than they can express to be cut off for 80 minutes at a time—especially in class where we're actually using computers."

Other students presented more fatalistic arguments, "The [teachers] know teens are on their phones more. How can I explain this? Having your phone when you get to class... that shouldn't be a big deal." Another student implied that using the mobile phones for non-educational purposes could be done in a way that did not disrupt class, "If kids are using their phones and not being caught-they're doing it in a way that's not disrupting their or their classmates' learning." He continued, "…because of kids asking for exceptions [from the teacher] the rules [inevitably] get stretched by teachers."

A third student stretched for a metaphor that connected what he saw as the uselessness of these bans on non-educational mobile phone use to larger cultural norms.

> [Not] having your phone during class is like a petty law that's meant to be bent or broken. It's like a weird but true example. Peeing in public you're not allowed to

> do it, but if there's no bathroom around, you got to go anyway—like jay walking. Stuff like that.

According to these students, students were going to be on their mobile phones anyway and teachers knew it. Moreover, teachers were well aware that their policies were not working and could not work, but insisted on proclaiming them anyway. One student put it succinctly, although he was okay with his teachers' policies against the phone use, "sometimes you have to break them." According to this student, students were within their rights to use their phones for both educational and non-educational purposes irrespective of their teachers' prohibitive classroom policy.

As suggested by the varied arguments against the teachers' classroom policies that prohibited mobile phone use, many of the students interviewed reported routinely flouting the rules. Some of the students believed that their teachers were often unaware of their phone usage in violation of explicit classroom rules. Students reported regularly pulling their phones out to communicate with someone via text or social media. "If it's chatting, that's for a brief second, then I put it away." Another student said, "People are usually on their phones, because sometimes we watch movies. People in the back are usually on their phone because she can't really see them." Another student added, "A lot of teachers don't want it out on their desks." However, "As long as they don't see it it's okay." This last student suggested an in-between "don't ask, don't tell" approach wherein the students would not clearly know that they are not supposed to use their phones, and the teacher would not clarify.

Other students believed that the teachers were aware of the violations and just accepted the prohibited non-educational device use unless these student-initiated uses

were actively disrupting class. “In French 2, students don’t take the class seriously. They use their phones under the table; the teacher doesn’t like it, but the kids don’t listen to her.” Another student who reported regularly using his phone for prohibited student-initiated, non-educational purposes in class opined, “Teachers today know the tricks of how kids are using their phones. It’s really hard not to get caught using phones in the class. Teachers know the tricks. That’s basically it. If you’re done with your work in class, or say that you’re done, you can use your devices…” He then suggested that these policies were nevertheless futile. Although many teachers banned phones for all purposes in their classrooms, “It doesn’t really matter; students are going to use their phones anyway…Teachers are figuring out how they sneak to use it, but then students figure out how to get around it.”

Changing Policy

Relative to the level of complaints that the students voiced about the no-phone policies, their thoughts on whether and how to change the policies were relatively measured. As evident in the students’ voices throughout, numerous students would change the policies. Some representative comments from these students include, “[h]ow can I explain this…having your phone when you go into classes. That shouldn’t a big deal.” “The kids want their phone and are not bothering anyone.” These arguments contribute to the larger argument about “texting not being a privilege [but a right] and the current policies being similar to petty laws in their uselessness.”

However, a significant proportion of the students argued for maintaining the policies even though they reported that they were regularly flouting them. One student observed, “[Students] don’t care for the rules. There’s like a few kids that just follow the

rules." However, she still wouldn't change the rules. "People, they don't have the patience…I don't know…I just wouldn't change the rules; they're fine." The student continued to clarify his thinking. "[Students] should just follow the rules and maybe teachers will lighten up a bit. If you don't, then teachers won't lighten up." This last response can be interpreted as suggesting that the status quo, where many teachers forbid mobile phone use in their classrooms is tenable because he trusted that the teachers and students would arrive at a mutually-beneficial understanding.

Another student followed on this theme supporting leaving the interpretation of the policies to students and teachers, "It's a good system as long as it's the teachers [who make the rules]. If it's a group of people that aren't in the school all the time [administrators] then they shouldn't be making the rules." He then explained his reservations about having "outsiders" involved in the policy making.

> Sometimes they make the rules from outside the school and put them inside the school. They might see one incident in a class that makes them not allow phones, but they'll miss out on all the good and discrete uses of phones. You really have to be there to see the details to make any rules. I think it should stay with the teachers.

A third student added humorously when suggesting that the current polices came from the district administration, "…some guy—there's always some guy, 'you know what would be a great idea—if the kids didn't use their phones in class, they'd learn more'." In mocking "some guy" from "outside the school" this student agreed with the previous student in suggesting that the district policy makers lacked the relevant everyday context to make useful school or classroom policies.

Somerville High School Case Study

The Full Circle/Next Wave Alternative school serves grades 6 through12 and is located in Somerville, Massachusetts, one town over from Cambridge. The school is designed to address the unique educational and socio-emotional needs of students who have not been successful in traditional educational settings. The school employs a unique teacher/counselor strategy wherein counseling is included in students' daily schedules and students participate in biweekly counseling groups. Somerville Public Schools serve about 5,000 students, 36.7% of which are white, 40% Hispanic, and 10% African American. The district has an 81.4% graduation rate. The Full Circle High School enrolls 48 students. Almost 60% of Somerville students are considered high needs, compared with about 44% for state. Of the students 35% are considered economically disadvantaged, which is significantly higher than the state average of 27.4%. The graduation rate for Somerville Public Schools (enrollment 1,276), which includes the Somerville school in the study, was 77% in the 2013-2014 school year.

As an Alternative School, the Somerville high school graduation rate is difficult to gauge given the fluidity of its enrollment as students transition into and out of the school. Somerville's per-pupil expenditure is much closer to the state average at $17,428. All three teachers in the study had worked at the school for a minimum of five years and have experienced the rise of mobile phones and the devices' encroachment into their classrooms. The principal, although only in her second year in the position, had previously taught at the school for many years and was familiar with the school culture.

Somerville Acceptable Use Policy

The Somerville Public Schools (SPS) acceptable use policy states:

> The SPS recognizes the important role of technology as an invaluable resource to assist staff to successfully perform the duties associated with their role in the SPS. Staff are reminded that the use of technology resources is subject to the same management oversight as other employee activities. The network is the property of the SPS and may be used only for educational and administrative purposes that are approved by the SPS.[2]

The statement of purpose simultaneously acknowledges the role of technology in teaching and learning while clearly setting boundaries and parameters around these uses. Although a reader could interpret the statement of purpose as giving equal weight to teaching and learning, and safety and protection, closer inspection of the detailed *user responsibilities* make it clear that the majority of the policy's emphasis is on safety and protection. For instance, of the 13 *user responsibilities,* 10 are framed in the negative—prescribing what a user should not be. For example: *Not attempting to install any software on computers.* Moreover, two of the remaining three responsibilities detail what a user should do in the event of a potential safety or privacy breach. The policy then states that the *use of the network is a privilege and not a right,* and that any use of the networks must be for educational or business purposes. Because the policy does not explicitly set out how and by whom *educational purpose* was to be defined, the teachers' and this researcher's default assumption would be that the definition would fall under the ambit of the district administrators that created the policy.

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[2] The school district's network is the wired and wired network that powers all the district's buildings. This network is governed by different levels of filtering software that blacklists certain sites deemed to be unsuitable for students. Wireless access to the network is general password protected. Teachers and administrators can bypass filtering software through their personal network accounts.

Administrators' and Teachers' Responses

District administration. All administration and faculty participants expressed awareness of the existence of school and district policies that governed the use of mobile devices in schools and classrooms. However, the participants expressed different levels of certainty in their knowledge of the current policies. The district administrators focused their remarks on the broader district goals for educational technology, their view of their performance with respect to those goals, and the district policy in creating those goals. The school principal and classroom teachers focused more of their discussion on the school mobile phone policies and trends in student technology-related behavior.

According to the assistant superintendent, the district had a BYOD policy wherein students could bring their own devices to school as long as they used these devices according to district policies (acceptable use and school policies). This policy was layered on top of an existing school policy that banned the use of phones in the schools. According to the assistant superintendent, "The BYOD policy allowed teachers to opt in." The purpose of this policy was to encourage teachers to integrate the students' mobile devices into classroom activities. However, according to a district administrator responsible for technology, "There is very little interest from the teachers at this point." In the past he had gone into a test classroom to lead a BYOD activity where students could use their own devices and led the students in teacher-led interactive classroom activities. He described these educational uses as "simple research-type activities" where students would use relatively simple functions of their devices such as Google Maps and

the phone's calculator. Such activities, however, were few and far between. Part of the challenge, the director suggested, was that:

> Teachers aren't ready for it. Bringing devices into classrooms when teachers aren't ready for it wouldn't make much sense. There's very little interest from the teachers here at this point. But we're ready, when the interest is there, we're ready.

The administrator then suggested that there was not much interest from teachers because "…teachers have so much other stuff they have to do, and the demands of kids doing well." The teachers' attentions were divided because of the demands for student performance, the technical administrator suggested. Training and preparing teachers to integrate students' devices into the classroom for teacher-directed educational purposes would require time that they could not spare.

The district administrator agreed that teachers are overwhelmed with other matters. "In an urban district they've got core instruction to worry about. [They're] focused on literacy and foundational skills." He explained that in their "urban district" with high student mobility and poverty, "[Teachers] have to keep their eyes on the ball [and] move slowly to leverage technology in specialized areas." He suggested that in such an environment the district is intentionally moving slowly. Consequently, many schools and principals were not aware of the BYOD policy and he did not get much feedback from school principals on the policy. "It's not really in the culture in Somerville. We're not always pushing the envelope on these kind of things."

Somerville School

All students at the Full Circle Next Wave middle and high school have been asked to leave the city's mainstream school due to behavior and truancy and are vulnerable to dropout. The instructors at the school are called teacher/counselors and each is assigned to a group of students that they meet with each week. The Full Circle Next Wave Alternative School in Somerville had experimented with mobile phones in the classroom. Three years ago, teachers and students from the school participated in a mobile messaging study where teachers and students arranged to communicate via mobile messaging outside of school hours. Teachers were set up with Google Voice to provide them with a separate phone number for interacting with the students via text-messaging. This arrangement enabled the teachers to use their computers, with full-sized keyboards and a larger screen, instead of the relatively diminutive keyboard and screen of smaller devices, and allowed the researchers and school administration to review the conversations with students without needing access to the teachers' personal mobile phones.

The researchers found that the teachers and many students who participated in the study engaged with the messaging medium to enable, invite, and deepen personalization of teacher-student interactions and support (Pollock & Amaechi, 2012). The nature of the texting interactions suggested potential for teacher-directed, classroom-wide mobile devices use. Although the use-case in this particular study centered around what would technically be considered non-educational uses of the students' mobile phones (primarily student socio-emotional support) the use was clearly intended to support the students' learning and academic performance. The teachers and students suggested that the relationships built through these primarily non-educational interactions contributed

significantly to the students' ultimate academic performance. Consequently, this use-case could be considered teacher-directed, non-educational use *in support of learning*. The three teachers interviewed for this study also participated in the past mobile messaging study. All referred directly or indirectly to the study or discussed text-messaging with the students in their account of mobile phone use in their classrooms.

All three Somerville teachers mentioned their students using their phones for student-initiated, educational purposes such as searching the Internet for class-related topics or using the phones' calculator functionality. These uses were generally student-initiated with minimal teacher intervention. Teachers also reported using their phones to interact with their students outside of class for teacher-initiated, educational purposes such as homework help, and non-educational purposes such as socio-emotional support (as in the Oneville Study). They generally did this to provide support to students they felt needed the attention and connection.

Seeking to call out the unique challenging situations of many of her students, one of the Full Circle teachers explained, "With the kids, some of them need an adult outside of school. They have adults at home, but some of those adults are not there for them." She offered an example of her interaction with her students, "If [my students] tell me that they can't get to school on time because they can't wake up, I offer to text them. And it works sometimes, but not all the times." She believed that this pattern of interacting with students had helped her build stronger relationships with her students. The stronger relationships, she argued, helped improve the students' comfort in school, resulting in improved academic performance. "There's a difference in the relationships I've had with students for one versus three years. There's more trust over time; they say more about

themselves." She also reported communicating with her students' parents to provide support that she hoped would help her students. "I've found that the only link [to the school] many of these parents have is my cell phone."

Another Somerville teacher also reported using the students' mobile phones for teacher-initiated, non-educational purposes by texting with his students. Similar to his colleague, students would text him if they were running late to school or if they had questions about assignments when not in school. As useful as he found the interaction with the students via the texting channel, he wondered whether the phones were possibly having an overall negative impact on his students' work. He described how his students would dictate five-paragraph essays on their phones and turn them in without proofreading. "I can see how they're helpful in dictating, but there's a deficit in typing and editing and presentational skills…A few kids started doing it, and then talked about it" and the word spread. He did not discourage this example of student-initiated use of their mobile devices for educational purposes—oftentimes it was the only way the students would turn in their work. But he found the practice troubling academically because, "There's a disconnect with the computer. And editing…you don't take accountability for your words."

A third teacher that worked with younger students also reported using her phone for non-educational purpose to text her students and mentioned how in the past she used to text some of her students to wake them up. This example of a teacher-initiated use of her student's mobile devices for a non-educational purpose echoed her colleagues' engagement of their students' devices. Again, while not engaged for a purely educational

purpose, she felt that this type of mobile phone use helped engage her students, and ultimately contributed to their academic success.

School Policy

According to the Somerville principal, the school's official policy was that the students could use their phones during the 10-minute break period and during their 25-minute lunch period. All the teacher participants acknowledged the policy. The policy was relatively new and according to one of the teachers, was created to "meet the kids half way because they were already taking their phones out a bit more" and to hopefully "[take] the argument about using [the] phones away." "If a kid took it out during class, then we're like, we give you two times to check it." The staff also thought "[the policy] would avoid them looking at their phone during class." One of the teachers explained, "They can't concentrate on their stuff when they're on their phone." Students tended to get distracted. Sometimes "they're fine until the text they get is about something that's going on outside of the school, which gets the kid so upset that they sometimes get up and leave." One teacher added that "Oneville [the previous texting-focused study] kind of sparked the policy [change]." Before the policy, the students were not allowed to have their phones out at all while in the school building.

Another teacher suggested that the process by which the policies were created illustrated the school's responsiveness to the students' wishes. Initially the new policy only allowed phone use during lunch; "[Allowing phone use during break] didn't really occur to us until [the students] pointed it out." When presented with the new policy a group of students suggested the "break time" amendment to one of the teachers. This

teacher then brought the request back to a staff meeting where the rest of the staff agreed. The teacher viewed this amendment as a compromise, "It was a compromise…sometimes you have to give in a little."

The principal supported the notion that the new policy involved the input of both teachers and students; she cast the interaction in a more favorable light, "[The] rules came up through teachers' discussion and student government [input] on appropriate free time use." Whether viewed as a compromise or a collaboration, all school-based stakeholders were involved in the creation of the current mobile device policy; administration and teachers created the policy with material input from the students.

Inconsistency in Policy Challenges

Although teachers, students, and administration were involved in the creation of the school policy, the different stakeholders were not equally satisfied with the outcome. "If I see a kid check his phone, I'm not going to cause a ruckus; but if they respond, they're in trouble." Apparently students were still using their phones for prohibited, non-educational purposes during periods other than those designated in the policy, and teachers were creating their own ways of dealing with the student-initiated, non-educational mobile phone use. The teacher above described a flexible approach to dealing with phone use in his class. He distinguished between student-initiated, non-educational uses such as checking their phone—presumably to view a message received, or something on a social network—that he felt did not significantly detract from their learning or otherwise disrupt class, and similar non-educational uses such as "responding" or actively engaging in a conversation on their mobile phones that he felt did disrupt learning. He would accept the former, but not the latter.

The same teacher also described other incidences of taking a lenient approach to the school's mobile phone policy. "[The policy] gets pretty loose between break and third period. It's not the school policy, but the majority of the school are allowed to use their phones for non-educational purposes, even those that would otherwise disrupt learning, during that time." Students are also generally allowed to use their phones for these same non-educational purposes in the classrooms during their elective time—an allowance, he suggested, that was made so students did not use their phones in the hallways where they were more likely to get caught by teachers that might not be so lenient about mobile device use. He then wondered why the school did not make a policy that allowed students to use their phones in the classroom for teacher-sanctioned, educational uses and non-educational uses that would not significantly harm learning. "Why not just do it?"

A second Full Circle teacher proposed a core reason that the students wanted to use their phones in classroom. "A lot of kids were upset about teachers being able to use their phones in the classroom." According to this teacher the students argued that they should also be able to use their phones in the classroom for similar non-educational purposes if their teachers had that privilege. Presumably the teachers that the students were referring to were not using the phones for educational purposes—in direct conflict with the district acceptable use policy. The teacher stated that she tried to not use her phone in class because "it would send the wrong message" to the students; she wanted to hold them accountable to the school's policy. Prior to the new policy allowing phone use during break and lunch, she explained, she would regularly take two to three phones away from students each class because students were using them for non-educational purposes. "They're so into [their phones] and need to check it." However, she claimed,

since the new policy took hold, things had gotten better. “It was a bigger battle before [the new policy].”

She discussed some of the strategies that she had developed to address the students’ persistence in using their phones for non-educational purposes. One of the classroom teachers had shared at a staff meeting a classroom policy of having the students optionally put their phones in small paper envelopes at the beginning of class and pick them up at the end of class. That the teachers were sharing strategies for dealing with non-educational mobile phone use in the classroom suggested that this was a school-wide challenge. The teacher adopted a modified version of the shared policy where she would give the students one warning for non-educational mobile phone use before asking them to put their phones in the paper envelopes. She also purchased a small toy jail cell to use in her class and allowed some students to put their phones in there at the beginning of class. She explained the rationale behind these two strategies. “What they’re afraid of is that the teachers will go through their phones when the phones are taken away. They need to see where it is.” She continued, “the kids don’t want others to see what calls or texts are coming in” while the phone is in the teacher’s possession, and the two strategies would shield the sequestered phones from prying eyes.

The teacher that worked mostly with the middle school students explained that the policy allowing students to use their phones during designated times did not apply to her middle school students. She explained, “[We] don’t have a standard policy on that. Just no phones,” though she added that “That’s something I’d like to bring up…can the kids use their phones, even if just to check at break and at lunch.” Although she had not noticed her students complaining that the older students were able to use their phones for

non-educational purposes during their lunch and break times, she admitted that her group was sometimes lax with their policies prohibiting non-educational mobile phone use when they felt that this use did not detract from the students' learning. She admitted that "Maybe at lunch we're a little bit lax if we see a kid with their phone out. But if it's during class, then we're on them."

Although each teacher had created their own unique way of dealing with mobile phone use—ranging from allowing limited non-educational uses such as allowing students to read but not respond to texts, to requiring students to put their phones away after one warning for any non-educational use—the teachers were on the whole not content with the varying approaches that the staff as a whole was taking with mobile phone use. The principal was aware of the prevailing climate with the students' use of their phones during class. "It's been two years that they can use [their phones] during break and lunch. They understand what the policy is, but they just don't like it." She also believed that not only did the students understand the policy, but they also understood the rationale behind the policy, "they understand why it's there" —a notion contradicted by one of the teachers who believed that the students were not really aware of the policy. But, she continued "there are some students that need to have that constant feed going, whether it's texting, social network stuff…It takes up a lot of class time to remind kids to put their phones away."

The principal understood and appeared to empathize with the challenge that the teachers faced and even acknowledged some of the different strategies that they took to address prohibited, non-educational phone use during class time. The science teacher has the phone in the envelop thing. That's been working really well in his class and [mobile

phone use] is not an issue." She saw challenges, however, created by teachers taking different approaches to addressing the same problem. "Every teacher has their own classroom environment; teachers try to find a style that works…Consistency would help students know what to expect." Teachers were basing their informal classroom policies about student-initiated mobile phone use on their unique classroom environment, and personal style and according to her observation, "Some teachers don't have a problem with kids using the phones in their classes" while other teachers do. The principal suggested that the disconnect between the different teachers' mobile phone classroom policies that students saw each day would make it difficult for students to follow any one classroom policy.

The principal was not alone in citing inconsistent classroom policies as a significant challenge to dealing with student non-educational mobile phone use in the classroom. The two upper-grade teachers expressed concern about the variation between teachers and classrooms, and even the middle school teacher suggested that she might eventually advocate for her students to be governed by the same policies that govern the Full Circle students.

One of the Full Circle teachers complained that, "It's frustrating to see a lack of consistency within the staff…with respect to how we implement policy...consistency is paramount, especially with a cell phone policy." This teacher had earlier explained how he normally took a flexible approach to dealing with mobile phone use in his classroom. He distinguished between non-educational uses, such as students checking their phones and then putting them away, that he felt did not significantly interfere with student learning—which he generally allowed—and other non-educational uses that he felt did

interfere with learning such as students actively engaging and responding to texts on their phones, which he would prohibit. However, he was aware that different teachers had different informal policies. Although he used this flexible approach in his classroom he wondered how his informal policy fit with a larger formal school policy that prohibited all student mobile phone use in the classrooms. He wondered out loud, "If a clinical [staff member] is walking through the hallways…and sees a kid in class on their phone, they might take the kid's phone." According to this teacher, the inconsistency in policies across teachers at the school could not only affect students across different classrooms, but also in the same class.

Another staff member walking through the hallways could seek to intervene with one of his counselees in a classroom—pitting different policies against each other. The Full Circle teacher that had purchased the jail-cell toy to help manage her students' non-educational mobile phone use put the dilemma more concretely, "Some teachers give [their students] more freedom than others." However, "…[the] kids find out and compare" leading to larger issues of equity and giving the students ammunition to challenge their teachers' mobile phone classroom policies. The solution to this dilemma, she suggested, was to standardize policies; she "would like a policy where everyone does the exact same thing."

Although the school had a policy, one that was relatively new and responsive to the students' wishes, the policy had not been fully successful in part because it had not been followed by the teachers. The teachers argued that the students could not easily be separated from their phones during class and that other teachers' leniency—a widely known secret at the school—made it more difficult for them to support the original policy

in their classrooms. The proposed solution was an alignment of teachers' informal classroom policies. But the question remained of how those policies should be aligned. Should teachers be required to adhere to the school's policy that restricted phone use to lunch and break, or should the policy be more responsive to exploration of the students' current mobile phone usage?

Students

Mobile phone use. When describing how they used their mobile phones inside and outside of the school throughout the course of the day, students reported spending most of their time on their mobile phones texting and using social networks. They also expressed a strong preference for text-based interaction over phone calls. A representative response explained, "You can make phone calls, too, but mostly text… Talking on the phone is overrated and boring…for old people." The student continued with a personal example. "When I'm texting I'll text a whole paragraph, but when I'm talking I'll be like, dead silent."

Most of the time, though, texting was the lowest common denominator. "I use basic texting to get to people who don't use Snapchat or Twitter." The student also mentioned texting with her teacher. "I would rather text teachers instead of call. It's kind of weird to call." Unlike her schoolmate that disliked phone calls because he found them "overrated and boring," this student presented a more pragmatic explanation for preferring texting over phone calls when interacting with her teachers. "They're usually busy all the time. It's more convenient to text them." She added that given her teacher's busyness, she did not want to call them at the wrong time, "and besides, they're already texting." Another student put it more bluntly when talking about preferring texting over

talking with her friends. “Blowing up their phone is rude because it interrupts their games or something if they’re on an important call.”

Even texting had a fallback, however. Facebook proved to be a constant across most of the students. One student who talked extensively about his use of Instagram and Snapchat—and even admitted to using Instagram every day during class—confessed to using Facebook to connect with family members he had not seen in a while, post his status, “be all over people’s timeline,” and follow up with friends who did not have a phone. “If they don’t have a phone, I’ll go on Facebook to message them.” Another student that also mentioned using Twitter and Instagram also expressed her fealty to Facebook. “I’m on Facebook like 24 hours a day…I use Facebook to message people, and Twitter for more public conversations.”

As with their all-day use, text-based, non-educational communication prevailed as the students’ primary use of their phones during the school day. Although the students were all aware of the school’s policy prohibiting all student use of mobile phones in the classrooms, the majority of the students reported engaging with their phones for non-educational purposes (primarily text-based communication) during class time. One student admitted to one such prohibited, non-educational use when she admitted, “Sometimes I sneak in class and text.” Another student explained that, although she generally tried to not use her phone in class, sometimes she would yield to one of these prohibited non-educational uses and “pull out her phone to check it.” A third student reported using his phone to listen to music in class. Because his teacher thought that this non-educational use disrupted class, they regularly reprimanded him for the use. “I get in

trouble because I put too much music on. I do it when I get bored. I get in trouble because you distract people or get distracted [yourself]."

However, some students also reported student-initiated educational uses of their mobile devices in the classrooms—mostly for basic functions. One student reported how she would use her phone for educational purposes with her teachers' consent. "[My teacher] lets me look for information on my phone." Another student reported being able to use the phone's calculator with his teacher's consent. "I ask her if I can use the phone for a calculator. It depends how she's feeling or if they know I'm actually going to use it [for calculator]." One student described how he used his phone outside of school for an educational purpose.

> I use it to look up stuff for class. Instead of grabbing stuff from a computer I just look stuff up. [My teacher] asked us to remember about the Holocaust. I completely forgot about it and looked it up [on my mobile device] before coming to school.

A few students whose teachers did not let them use their devices for educational uses expressed a desire to use their mobile phones for student-initiated, educational-uses and wanted the school to formally endorse this type of student-initiated use. One student complained, "We can research stuff on our phones instead of going to another room to use a computer that barely works." Another student who had recently transferred to the school from another district observed, "It would be better if people got to use their phones during class. In [my other district] some of the students have iPads in class and use them for [learning]."

A smaller group discussed teacher-initiated uses of their devices for non-educational purposes that were explicitly in support of the students' learning. These uses were mostly for student support and revolved around student-teacher texting for the students' socio-emotional support. One student mentioned that she regularly engaged in this sort of texting with her teachers, explaining that the teachers had arranged for the texting communication when she first arrived in the school. She explained her use, "(If) I'm not going to school, I usually text my teachers to tell them I'll be late or not coming." Another student described the same non-educational use-case. "If I'm late I call [one of my teachers] to let them know I'll be late."

Although the students did not articulate as clear a rationale as their teachers for these type of non-educational uses of the mobile devices, the frequency and consistency of these sort of reports suggest the importance of these unique types of use-cases. While technically non-educational, these use-cases appear to have served a unique academic purpose by providing a channel for communication that could contribute to strengthening the relationships between students and their teachers, which in turn would support the students' academic performance.

Students Discuss Policies

All of the students interviewed expressed awareness of a school rules restriction on the use of mobile phones in the classrooms and greater school. Of the high school students, where the policy was to only allow phones during lunch and break time, four out of the five participants expressed knowledge about the specific policy. A few of them detailed how they found out about the policy. "You can only have your phone during break and lunch…It's a paper in the hallway with a bunch of rules." Another student

added, “Two kids from student council will tell us all the rules” when they first arrive at the school as new students. The two Full Circle participants similarly identified a school policy. One explained that their policy detailed that “You can’t use an electronic device in school without permission…it’s a school rule. [My teachers] told me about it.” The second explained that her teachers told her that “not using the phone is part the rules.”

A fifth upper-grade student focused the majority of her discussion on the variation in mobile device-related policy across teachers and classrooms. “The policies vary from teacher to teacher. Some people don’t want you using your phone because they don’t want you texting in class—if you get a text it changes your mood.” The other students who expressed awareness of the restriction on phone-use to breaks and lunch also discussed the variation in classroom policies across teachers and classrooms. “Sometimes it’s annoying because I wish the teacher should be like [my teacher] … [She] is lenient.” Another student, who explained that she would regularly interact with up to five different teachers on a typical day as she attended their classes, initially suggested that all her teachers currently enforce the mobile phone policy in the same way, then later admitted that “Some teachers are strict against it. Some will hold phones for a day, some for the duration of the class period, some will ignore…” She then gave her own recommendation for how to deal with phones. “The best way to enforce it is to take it away for the whole day.” Even a middle school student reported their various teachers having different policies. One student explained that she had two different teachers, but “[Teacher 1] asks me to put my phone away; [Teacher 2] is more flexible.

Students Challenge the Policy

Although the students acknowledged variability in teacher policy and favorably recounted some of their teachers being flexible or lenient with the enforcement of the school policy, like their teachers, they were as a whole quite unhappy with the policy environment. Unlike their teachers whose primary concern was having a consistent policy across the school, the students' complaints were more focused on the overall restrictions to phone use. One of the high school students complained, "It's stupid sometimes. Kids can research stuff on their phone instead of going to another room to use a computer the barely works." Another student continued on the restrictions of educational use theme. She complained that she had to ask a teacher to use her phone calculator during math class, and explained that teachers' willingness to acquiesce to these requests depended on their mood. "Depends how they're feeling or if they know you're actually going to do it."

A couple of students understood some of their teachers' rationale for prohibiting the phone use in many instances. One student explained her teachers' rationale this way, "I can't use the phone in school because I'm supposed to pay attention. If a friend texts me and I respond, I don't focus." However, even with this elaborate explanation and seeming agreement with the teacher's rationale for prohibitive classroom policies, she did not always obey the rules. She explained, "The rules make sense, but I don't obey." She then implicated her teachers in the charade, "The teachers know it's going on, but they only act when they witness something."

Another high school student similarly presented both sides of the argument. "Some people don't want you using your phone because they don't want you texting in class; if you get a text it changes your mood." She even had a related personal anecdote to support the observation. "One time I saw something on Twitter and seeing that got me

mad and distracted me." Still, irrespective of her observations and experience she would prefer that students be allowed to use their phones during class. "All the kids use their phones in school anyways so they should be allowed to use it." Another student gave a more comprehensive explanation and added a suggestion for additional leniency from teachers. "A lot of the students would want the rules to be gone. They'd want to use their phones. Education is key and to get it you have to focus. Phones don't help you do that. If you were smart, you'd know not to use it…If the rules were bendy a bit, they'd understand not to use it."

Despite their grievances, the students did approve of the fact that some of their teachers had allowed them to use their phones for educational purposes. One middle school student reported doing PowerPoint on his phone during the computer lab. Three of the high school students reported using their devices for student-initiated, education-related purposes. They would use Wikipedia and Google to conduct research for class assignments. A student that did not report using her phone for educational purposes expressed interested in doing so. She suggested that she would like to do her homework on her phone because she did not have a computer at home, adding that "it wouldn't be annoying on a smaller screen." Despite what teachers and administration might think, students did not only want to use their mobile phones for non-educational purposes, many of them yearned for school-wide policies to officially sanction student-initiated educational uses of their phones.

Students Want More Voice

Given their general dissatisfaction with the policy state of affairs, the students were critical about the policy creation process. They suggested that giving students more

voice in the process would help matters. All five respondents who discussed the policy creation process believed that the policy was created by teachers, principals, or a vague "teachers and principals." One of the high school students complained about students not having voice in the process. "The principal made the policy. I don't know. I just think all principal make all the rules. I don't think students had a say in it… because students never have a say in anything." He believed that for the students to get a say, they would have to go outside the school and talk directly with the superintendent. He believed that the principal would not be amenable to changing the rules because "she be forcing it. She'd say that's not how it works."

Another high school student continued with the disenfranchisement argument, "Teachers have a greater say over us—their words are more stronger [sic] than ours." Notably, both middle school students did not believe that students needed more voice in the process. Speaking about the policy restricting phone use during class, one of these students explained that the rules "make sense because people can look up inappropriate stuff. The second student assumed a more ideological tone. "You come to school to learn. If you don't want to come to school [to learn] then don't come." It appears that the older students, for whom their mobile phones had truly become extensions of themselves, had become accustomed to their phones more than the younger students and wanted to use them more openly in class.

CHAPTER 5: FINDINGS

The district and school policies governing the use of mobile phones in the classrooms studied, combined with pressure from students in daily practice, inadvertently placed teachers in a compromised situation. Teachers at both schools were caught between two conflicting pushes that impacted their classroom policies. District and school policies "pushed from above" to direct and regulate the use of mobile devices in schools and classrooms for "educational purposes." Students "pushed from below" by resisting restrictive school policies and insisting on using their mobile devices for educational and non-educational purposes in the schools and classrooms irrespective of school and district policy. The district and school policies ultimately constrained the teachers' ability to respond to their students' increasing demands to use their devices. These policies also limited teachers' ability to explore unique ways that devices could be used to support student learning inside and outside the classroom.

In an effort to address the tension created by these two sets of forces, teachers responded with a spectrum of unique strategies and attendant classroom policies that addressed both student- and teacher-initiated educational and non-educational device uses. While many teachers agreed that teacher-initiated educational uses were acceptable in the classroom as long as they conformed to school policy, the acceptability of non-educational uses, whether initiated by the teacher or the student, depended heavily on individual teachers' personal philosophies and how much they felt these non-educational uses contributed to the students' academic success. To illustrate the nuance of the thinking around the various types of mobile phone use, I created a taxonomy of the educational and non-educational uses described in the participants' discussions (see

Appendix A). Educational uses of the students' mobile devices were uses that were clearly in service of the production, consumption, or analysis of school work. Non-educational uses of mobile devices were uses that did not have direct connection to with the production, consumption or analysis of school work. A notable subcategory of use, non-educational uses that never-the-less supported students' learning, also arose from the discussions. These uses were not clearly in service of the production, consumption, and analysis of school work; but according to participants, indirectly supported the students' learning.

The resulting menagerie of classroom policies had varying levels of alignment with district and school policies focused primarily on the individual teachers' experience, expertise, and interest, while also addressing their students' demands. Additionally, many teachers felt that the resulting spectrum of sometimes-conflicting, teacher-generated and administration-generated policies within each school posed a challenge to teaching and learning within individual classrooms. The teachers asked for more direction and support from the district and school administration to make the teachers' strategic approaches to engaging with mobile technology more consistent across classrooms, and more input in the process for setting the policies.

Policy Push

The use of students' mobile devices in both schools was officially governed by a combination of district and school policies. District policies, detailed in the two districts' acceptable use policies (see Appendices F and G) governed the use of all electronic devices that operated on the schools' network, both district- and privately-owned devices alike. School specific policies at the two sites provided specific guidance and regulations

about the use of students' mobile phones in the classrooms. According to processes at both schools as described by district and school administrators, teachers, and students, these policies were to be communicated to students at the beginning of each school year via the schools' student handbooks and by direct communication during school assemblies at the beginning of the school year. Faculty and staff were to be informed about the policies and any new changes during training meetings at the beginning of each school year. Taken together, the acceptable use policies, the student handbooks, and the process of regularly communicating the specific policies regarding the use of mobile phones in the two schools created a "policy" climate meant to direct and regulate the use of students' mobile phones in the classrooms for educational purposes.

District-Level Policy

The acceptable use policies in both districts served two primary purposes with respect to technologies in the schools. The first purpose was to communicate that the districts saw potential for technology to be used for an educational purpose. The districts supported the limited use of various technologies for educational use. However, the districts' support for technology use in the schools and classrooms was qualified. The policies in their entirety suggested that although these technologies could have educational purposes, they could also provide access to "inappropriate" sites and confer no educational value. Consequently, the district and schools regulated the use of these devices within the school. In explaining the district's position on technology's potential for teaching and learning, the Somerville policy begins,

> The Somerville Public School recognizes the important role of technology as an invaluable resource to assist staff to successfully perform the duties associated

> with their role in the Somerville Public Schools.

Similarly, the Cambridge acceptable use policy begins,

> While there are many valuable resources on the Internet, there also are many sites that can be considered inappropriate for students and serve no educational value …The Cambridge Public Schools Computer Network and Electronic Devices are established for limited educational purpose.

Where the Somerville policy introduction speaks more broadly about "technology's potential" without explicitly defining what constitutes "technology," the Cambridge policy introduction explicitly calls out the "computer network and electronic devices," suggesting more clear and narrow regulatory focus.

However, while the Somerville policy focused on the staff's use of educational technology to "successfully perform" their duties, the Cambridge policy appeared to take a broader view about how educational devices can be used for learning. By not speaking specifically about staff use of the devices and network, as in the Somerville policy, the Cambridge policy allowed for the possibility of student-directed use of students' mobile devices for "a limited educational purpose." In both cases the policies' use of terms such as "limited educational purposes" in Cambridge and "duties associated with their roles" in Somerville left room for interpretation of what would qualify as appropriate use. Because the policies did not detail how and by whom *educational purpose* was to be defined, the default assumption would be that the definition would fall under the ambit of the district administrators that created the policies.

Despite the slight differences in their focus, taken together, these two opening statements suggest that both districts support the use of technology for "educational

purposes" in their schools and classrooms. These positions underpin the two districts' philosophies about the use of all technology—hardware, software, and networks—in their schools and classrooms. However, both districts' policies then placed boundaries around the use of technology and explained their rationales. Somerville explicitly advises teachers:

> Staff are reminded that the use of technology resources is subject to the same management oversight as other employee activities. The Network is the property of the Somerville Public Schools and may be used only for educational and administrative purposes that are approved by the SPS.

Not only were the technology and network only to be used for educational purposes, they could only be used for educational purposes approved by the district. It was not immediately clear in the policy how and when the district approved "educational purposes." Taken at face value, this statement would limit what could be done with these devices. Moreover, what was considered "educational purposes" was to be designated by district and school administrators, taking the final decision out of teachers' hands.

Similarly, the Cambridge policy seeks to clarify that although there were resources available online that could provide educational value, not all do. While there are many valuable resources on the Internet, there also are many sites that can be considered inappropriate for students and serve no educational value. Indeed, the policy suggested, some of these non-educational purposes could prove harmful to students. Teachers could not simply use or permit any technology in their classrooms—nor could they decide on their own what is "educational," or even "appropriate" for their students. These decisions lay with district and school administration. Thus, district policy

constrains teacher innovation ironically because it suggests that all appropriate or educational uses were to be determined by the district.

To further emphasize the point that these networks and technologies were only for district-determined "educational purposes," both districts' acceptable use policies stated that use of a districts' network "is a privilege and not a right." Teachers and students did not have the "right" to use technologies and devices on the districts' networks as they wish. The districts provided them with the "privilege" to use the network, and then only for purposes the district eventually condoned. While the definition of "acceptable" or "educational" uses was left vague, the fact that the district ultimately granted the "privilege" to use technology based on district assessments of acceptable or educational technology use actually created a climate where teachers felt that they had limited control and discretion over technology use in their classroom—irrespective of their or their students' experience and expertise with the technologies.

School-Level Policies

The district-level policies offered higher-level guidance and articulated the districts' underlying philosophies about the appropriate use of technology in the classroom for the ill-defined "educational purposes". The student handbooks at both schools focused on the details – the "when, where, how, and what," – introducing more specific guidelines for teachers and students (see Appendices H and I). Additionally, whereas the districts' acceptable use policies discussed all technology use, the school handbooks specifically called out the use of mobile phones in the schools and classrooms, with a focus on prohibiting specific uses. The handbooks also established a significant

difference in the overall policy approach at the two schools, and dictated differing guidelines and prohibitions to their respective faculty and students.

Cambridge took a more decentralized approach in policy. The school's handbook states:

> Appropriate use of electronic devices such as cell phones, radios, headsets and sound equipment is permitted during passing time in the hallways and in the cafeteria during lunch time, and in a classroom when the teacher has given permission (provided it is not disruptive to the environment).

The Somerville school, for its part, took a more directive approach and set a common policy for all teachers and students, one that still focused on prohibiting specific uses of phones. According to Somerville faculty and staff, and corroborated by students, the handbook only permitted the use of students' devices during the students' lunch periods and designated break time. Phones were allowed in the classrooms "only if [students] turn it off [not on vibrate], and keep it out of sight."

Unlike the district policies that constrained teachers through the vagueness and lack of teacher input regarding educational and appropriate use of technologies, school-level policies constrained teachers by explicitly limiting where and when students' mobile devices could be used, or, as in the Cambridge high school, creating a climate where students could encounter different and often conflicting classroom polices throughout the day, a setup that left some teachers feeling influenced by, if not beholden to, other teachers' policies. While the use of "appropriate" and "educational value/purpose" in both sets of policies made it clear that the districts wanted educational value to drive the use of all technologies, the actual definition of educational value, or

what is appropriate, for that matter, was not clarified and implicitly left in the hands of both school and district administrators. The *implicit* constraints around use created by this district-level lack of clarity, the explicit school-level constraints around "when and where" mobile devices could be used, combined to constrain teachers' ability to explore the educational potential of these devices and creatively respond to their students' demands to use their devices in class. These limitations in turn created a tension among teachers as the sought to navigate the conflicting demands of policy and classroom reality.

Cambridge Policies

In Cambridge, where the school policy gave teachers the autonomy to decide their classroom policies, teachers were encouraged to create policies that matched their personal preferences. However, even those teachers that chose to permit the use of mobile devices in their classrooms were still bound by the districts' evolving definition of appropriate use. A few of the Cambridge faculty and staff discussed the difficulty in managing this balance between teacher/student interest and district policy guided by "educational purpose" and "academic use."

When discussing this tension, the district's Chief Information Officer explained, "There are districts that don't care, and encourage kids to do whatever they want…People always ask, 'Why can't we let things go when other places do it?'" Here, the Chief Information Officer explained that teachers complained about the level of control that the school and district exerted over how teachers can use different types of technologies in their classrooms. These teachers compared the district's tight control to less *pushy*, more laissez faire policy climates at schools in other districts where teachers are given more

control over their classrooms, and more freedom to determine what constitutes "educational purpose" and "academic use." Indeed, one of the Cambridge teachers presented this same complaint when discussing her disapproval of the district's technology policy that covered mobile devices and "the scariest permission slips" that the school required teachers to send to parents before using new technologies in their classrooms. "The policies are too tight and risk averse. Cambridge thinks it can protect everyone from everything." This complaint touched on the district's expressed goal of shielding students from sites that may harm students as addressed in the acceptable use policy, "While there are many valuable resources on the Internet, there also are many sites that can be considered inappropriate for students and serve no educational value."

One district administrator, who was core to the process of creating these policies, explained the position outlined in the district's acceptable use policy. She was concerned with the potential negative safety implications of more laissez faire policies governing mobile devices in the classroom. "What's the purpose? What's the intention? Sometimes people with technology get too casual" when using technology in the classroom. Part of the negative effects could come from students' personal data being gathered by companies providing unapproved apps and services on the devices. She expressed concerns about the amount of student data potentially gathered by these sites. "Some districts have simpler policies. [But] some of this goes back to confidentiality [of student information]." These more laissez faire approaches that potentially put students' personal data at risk, would represent inappropriate classroom use she argued, and would put students in harm's way.

What constitutes an educational use? What constitutes an appropriate use? Here the teacher quoted earlier suggested that the district's definition of educational use is compromised by its focus on "protecting everyone from everything." Taken together with the excerpt from the district's acceptable use policy, one can view the implied relationship between the three factors as (*educational purpose + student safety = appropriate for students*). Not only was the definition of educational purpose unclear, but the focus on student safety and its interaction with educational purpose complicated the already muddied understanding of what could be used in the classrooms—even in Cambridge where teachers could ostensibly decide their classroom mobile device policies.

Beyond the constraints placed on teacher and student use of mobile devices in the classrooms by the district's focus on "appropriateness," teachers also had to deal with the challenge of students wanting to use their phones for clearly non-educational purposes—whether or not the teacher allowed phone use in the classroom. One teacher complained, "I know that [the students] want to have their phones out all the time…Kids get calls from their parents. People get [phone] notifications and get buzzed." The teacher then discusses how her classroom policy differed from some of her peers regarding students listening to music in class.

> Other teachers are good with it. I'm a certified SPED teacher. Though many kids think they can focus better when listening to music, that's not actually true…I think it's a distraction. As an English teacher, having words coming in your ear when you're trying to compose [an essay] is not good.

In describing the rationale behind her classroom policy, this teacher also highlighted how her policy significantly conflicted with other teacher's policies—a situation made possible by the school's decision to allow teachers to determine their own classroom policies. Another teacher that did allow her students to listen to music in her class also alluded to the potential conflict between classroom polices. "Some kids were shocked that they can listen to music in my class." The uniqueness of her classroom policy was not limited to music listening, however. "I've had kids tell me that they're surprised I don't make a big deal when they're in extended text conversations." While they did not explicitly complain about the effect of differing classroom policies, the teachers were keenly aware of the variation in policies and that their students experienced these differing policies during their school day.

Teachers also expressed differing levels of concern about how the variation in classroom policies affected their own policies. One Cambridge teacher that did not want phones in her classroom complained about the difficulty she had managing the students' non-educational phone use that she felt did not support their learning. "It's near impossible to focus on both phones and instruction…It would take 100% of my energy to just focus [on managing] phones." Despite being able to dictate a no-phones policy in her classroom, she felt ineffective in doing so, in part because her students experienced differing levels of leniency from other teachers in other classrooms regarding their student-initiated educational and non-educational mobile phone use. She expressed, "Honestly, I feel like there should be a zero-tolerance policy where they come in and [the phones] go in their backpack...until the school takes a harder stance [against phones in the classrooms] it's a losing battle."

This teacher was advocating for a policy that would prohibit phones from all classrooms for all student-initiated uses, educational or otherwise.

Somerville Policies

Where Cambridge district and school policies allowed teachers to decide how to manage their classrooms, the Somerville school took a more directive approach with their school policy. The faculty and staff drafted a policy aimed at being responsive to the students' existing mobile device use patterns, while limiting the potential for these devices to disrupt class. This policy was entirely focused on students' non-educational use of mobile devices in their classroom that did not support the students' learning and did not address educational use. The faculty and staff described their policy as a recent compromise with students.

According to one teacher, previously the students-initiated non-educational use of mobile devices in classrooms for purposes that did not support their learning had become unmanageable. Students were disrupting class with their non-educational mobile phone use. One teacher explained, "They can't concentrate on their stuff when they're on their phone." She then gave an example of a previous student-initiated, non-educational phone use that would disrupt the larger class. "They're fine until the text they get is about something that's going on outside of the school." She described how students would get news about something outside of class that would upset them and cause them to act out and leave the class.

Faced with a rising number of such events the faculty decided to meet the students halfway—drafting a policy that would limit similar classroom explosions, while providing the students with time and space to use their phones for non-educational

purposes inside the school, just not during class time. Another teacher added, "…the meeting [to change the policy] was prompted by excess use [of the mobile phones] and [students] walking out because they didn't want to give their phones up."

Up to that point the school's existing policy had banned all student-initiated mobile devices use on school grounds. When discussing the new policy, the school principal explained, "the [new] rules came thorough the teachers' discussion and student government [input] on appropriate free time use." One teacher described the climate before the new policy, and the faculty's goal in creating the new policy.

> The meeting to come up with the new school policy was prompted by kids always walking out because they didn't want to give up their phones. The new policies were to meet kids half way because they were already taking their phones out…. Ideally this policy took the argument about using the phones for non-educational purpose that did not support student learning away [from the students].

Or as one of the teachers put it more succinctly, "It was a compromise…Sometimes you have to give in a little."

Indeed, even the most recent version of the policy was not completed until teachers accepted a last minute student request. The request gave the students more opportunity to use their devices for non-educational purposes that did not support the students' learning during the school day by allowing use during the students' break time. By describing the policy as a "compromise," the faculty and staff were suggesting that it was not ideal for faculty or students.

The teachers' discussion about the limited impact of the policy bears out the "compromise" assessment. According to faculty and staff, they had faced so many

challenges with students using their phones in the school and classrooms for non-educational purposes under the old no-device policy that they hoped a more lenient policy would appease the students. One teacher expressed the teachers' resigned acceptance, "They're so into their phones and need to check it." She suggested that the new policy had improved matters, or at the very least, decreased the students' resistance. "I used to take two to three phones each class. It was a bigger battle before [the new policy]." Still, she maintained, "It takes up a lot of class time to remind kids to put their phones away." The policy, although well intentioned, had not fully addressed the students' desires to use their mobile phones during class for non-educational purposes that did not support learning. Despite the new policy, the students were still using them in the classrooms for these non-educational purposes during instructional time.

Even with a more permissive stance towards the use of mobile devices for non-educational purposes in the school than was previously held, teachers at the Somerville school still felt constrained by the school policy, which they felt was a compromise, limiting what they could do with students' mobile phones in their classrooms. The new policy was supposed to decrease students' use of their devices in the classrooms for non-educational purposes by giving the students opportunities to use their mobile phones for purposes that did not support learning inside the school, but outside the classrooms.

However, the policy had limited effectiveness as borne out by the teachers' continued complaints about the students' persistent device use for non-educational purposes in the classrooms. Seeing this continued demand, some of the teachers expressed interest in coopting their students' interests in their phones for educational purposes. One teacher described how teachers in another school district used mobile

phones for teacher-initiated and directed educational purposes, "…there's so much more they have in Lexington with posting lessons, homework, notes, etc." Another teacher described how her son, who attended another school district, could use Google Docs on his mobile phone at home and school—another example of a teacher directed educational use. "He gets notes and school assignments [on his phone]." She expressed a desire for similar uses at her school. "We could do Google Docs here on the computers; putting it on the phone would allow [the students] to take [their work] home." Both teachers saw, as demonstrated in other school districts, the potential to use the students' phones for teacher-directed educational purposes. But this approach was not possible within their current school policy climate. Since the school policy officially prohibited students' use of their mobile devices in the classrooms, any attempt by teachers to leverage the students' interest in using their mobile phones for educational purposes, even teacher-initiated and directed, would officially fall afoul of the school's policy.

In summary, whether through school policies that sought to distribute authority to teachers, (as in Cambridge), or through school policies that prohibited the use of mobile phones in classrooms irrespective of teacher preference or expertise (as in Somerville), teachers at both schools felt constrained by the sum total of policies that governed their ability to explore the educational potential of their students' mobile devices. In Cambridge, although teachers were given the freedom to determine how to use students' devices in their classrooms, their ability to use these devices was still constrained by the district's insistence of approving various apps and device use-cases to ensure that they were appropriate for educational purposes. Moreover, teachers who did not want mobile phone use for any purpose in their classroom felt similarly constrained by the school's

policy. They felt that students using their mobile phones for educational and non-educational purposes that did not support their learning in other classrooms were more likely to insist on using the devices in similar fashion in their classrooms, effectively compromising their no-device policy.

In Somerville, where the school policy prohibited student device use for both educational and non-educational purposes in the classrooms and restricted any use to designated times and spaces during the school day, teachers similarly felt constrained. Where their Cambridge counterparts were constrained by the district's focus on educational purpose and appropriateness, Somerville teachers' ability to experiment with phones for educational purposes in their classrooms was constrained by the school's restrictive policy on mobile phone use. Additionally, as with their Cambridge counterparts, Somerville teachers also felt compromised by the inconsistency of teachers' de facto classroom device-policies, which also contradicted the school's policy. Such inconsistency across classrooms created the potential for students to receive mixed and conflicting messages from their teachers.

Students Resist (Student-Initiated Uses)

While the district and school policies in Cambridge and Somerville worked to constrain the teachers' ability to explore and use students' mobile devices for student and teacher-initiated educational purposes in their classrooms, students at both schools were resisting the teacher and classroom policies and attempting to use their mobile phones in the classrooms much as they used them outside of the school building—for educational and non-educational purposes alike. These students, who had become accustomed to carrying and using these devices in their everyday lives, had, to varying extents, started

using their mobile phones in the classrooms for both work and play, for educational and non-educational purposes, with or without their teachers' acknowledgement and/or support.

Students at both schools reported using their phones for many purposes that could be classified as both non-educational and educational. They tended to intersperse their descriptions of all types of uses in their responses about how they used their phones during class. I later categorized the uses as non-educational or educational according to the intent explicitly discussed, or implied by the students in their responses.

Among non-educational uses, messaging, including texting and communicating via social media, was the most widely reported student-initiated non-educational use of the mobile phones. This was followed closely by the browsing of other students' post on the various social media sites. The most frequently referenced site was Snapchat, followed closely by Facebook and Instagram. Twitter was also discussed; however, the microblogging site was much more popular at the Somerville school than it was at the Cambridge school.

Less popular than messaging and social media among student-initiated non-educational uses, but reported by students at both schools, was students listening to music on their phones. Although students described listening to music on their phones throughout the day, the students' recounting of their uses during the school day was quite compelling. Students reported listening to music on their phones during class "down time" as well as while working.

Finally, numerous students reported using their phones for student-initiated educational purposes. These students' educational uses of their phones ranged from

simple uses such as taking notes and snapping pictures of assignments on their way out of class, to more complicated uses such as composing their writing assignments on their phones using Google Docs. Six of the nine Cambridge students reported using their phones' cameras. They used the cameras to capture images of assignments as reminders and for creative purposes such as capturing image ideas for class related projects. The next most popular student-initiated educational use of the phones was "looking stuff up." Five students across both schools reported using their-phones to access online sources related to their school work. Google Docs was the most widely reported higher level student-initiated educational use of the phone. Four students across the two schools reporting using Google Docs on their phones to complete their work at school and home.

Non-Educational Uses

The non-educational uses that students reported fell into two major categories, in support of academic work, and not affecting or negatively affecting academic work (see Appendix A). The majority of the reported examples of students using their mobile phones in support of academic work were students discussing the usefulness of being able to listen to music while working. While listening to music was not directly related to the production, consumption, or analysis of academic work, many students felt that listening to music could support their academic work. Seven of the students reported listening to music as one of the primary uses of their phones. Although they listened to music inside and outside of the school building for many non-educational purposes, many of them argued that listening to music while working helped students focus on their work. One Cambridge student declared, "Sometimes kids work better with music." Another student observed, "Music is calming and helps keep me in sync." A third student

suggested that the teachers needed to trust the students more. “Some teachers don’t trust us enough to let us use the phones in the classroom… most teens focus better with music…teachers should let us use the phones, even if it’s just for music.”

Even when not used for strictly educational purposes, the students argued that the mobile phones could still be used in ways that facilitated or supported learning. This argument challenged the notions of “educational purpose” and “academic use” at the heart of the districts’ acceptable use policies. Where should the line for what is appropriate be drawn? Who should be involved in drawing the line? Perhaps the districts’ focus should not be on a district-held definition of educational purpose, but should instead fall on a more flexible and teacher-student negotiated determination of “in support” or “not in support of learning.”

Students did not only use music in class to focus, however. One student reported music use that blurred the distinction between non-educational uses that supported learning and those that were neutral or detracted from learning. She described using music to fill self-described “downtime” in class—times when the students were not actively working. When students found themselves with such “free time,” their attention went to their mobile phones. Music was one option. One student who enthusiastically described how he listened to music on his phone all day—from his walk to school, to dance class after school—explained how he used his phone during class. “If you’re done with your work during class… you can use your device to listen to music or play.” Another student explained, “If the class slows down, I’ll listen to music or send a Snapchat.”

Students would not only fill their "down time" with music, but would also use other functionalities of their phones. One of the students above referenced a generic student-initiated non-educational use of their mobile phones for "play" during downtime. Other students gave similar accounts of the mobile phone use during down time. A student in the study explained, "I turn on my phone when I'm not interested in what's going on around me. I'm able to day dream." The student that discussed listening to music during "down time" also described a more specific non-educational use: Snapchat, one of the numerous social networks popular with high school students. Other students in the study reported similar social network use during down time. One student boasted, "I use texting, Snapchat when I'm killing time." These examples underscore how essential the mobile phones were to these students; any free moment could and would be filled by their mobile devices. Their phones served as a music source, a game system, a social network—a portal outside of the classroom to their friends elsewhere, and much more. Given these potential uses, the fact that the students would turn first to their mobile phones becomes more understandable.

What constitutes down time? Class time when students have no academic work to complete? Who decides when a student has down time? If the students find their phones so appealing, how can teachers be certain that they are not choosing to use their phones for these non-educational uses instead of school work? Addressing this question leads us into the larger discussion of non-educational uses that distract or disrupt learning (see Appendix A). In the students' examples above, the descriptions of down time were vague or general enough to leave room for argument. While the first student specifically referenced "down time," another student referred to being "done with [their work]." Yet

another student mentioned “killing time.” A fourth student was even more explicit, “When I’m not interested... I day dream.” These descriptions increasingly suggest students using their mobile phones for non-educational purposes instead of, not in support of, learning and academic work.

Indeed, a few students in the study reported using their phones for non-educational purposes that clearly detracted from learning. The most common use was texting or social media. One student explained, “I use it for text and Snapchat and to entertain myself in class.” Many students found interacting via text-based communication more comfortable than talking on the phone. When explaining why she enjoyed texting so much one student admitted, “When I’m texting I’ll text a whole paragraph, but when I’m talking I’ll be like-dead silent.” Another student described regular opportunities students found where they could use their mobile phones for non-educational purposes with impunity. “People are usually on their phones, because sometimes we watch movies… The people in the back are usually on their phones because [the teacher] can’t really see them.”

While the quote does not provide sufficient information to confirm beyond doubt that the movie being shown was not for entertainment during official class downtime, the student’s explanation that students were on their mobile phones in the back of the classroom “because teachers can’t really see them” suggests that the students were using their phones “instead of” what they should have be doing. In this example, the students’ devices were clearly detracting from their classroom activities.

A tenth-grade student’s argument in favor of teachers being permissive about student’s using their phones for non-educational purposes provided another example of

students willfully and surreptitiously using their phones instead of doing school work. She stated, “What if you get an important text message? I do it. I ask the teachers to reply to quick message, but I end up on Facebook and Snapchat. Let me check this, let me check that.” This example suggests the danger in teachers taking a more permissive stance about how their students can use their mobile phones in the classroom.

Students’ discussion of their classroom text messaging further illustrated the challenges with allowing students to use their mobile phones for non-educational purposes. Several students discussed receiving “important text messages” from people outside class, *while* they were in class. Like their teachers they distinguished between the short, quick responses to these important messages that addressed their immediate needs to respond and be abreast of the situation, and longer text-based conversations that could distract them from class.

In discussing a teacher’s practice that she agreed with, one Cambridge tenth grader reflected, “If you get an important text message you can check your phone…I’ll ask the teacher to reply with a quick message.” Another student explained, “If I do get a notification, I’ll try to respond quickly and put it down…people are upset because they can’t talk to their friends and get back to working.” A third student said, “If it’s important I respond immediately; otherwise I let it be.” Of course, what is deemed important, much like what is considered down time, could vary from student to student. To this point, a Cambridge senior attempted to explain her rationale for deciding what was “important.”

> When I do use my phone in class, I use my judgment to decide if I need to respond to the message right away…If it’s a question on homework or extracurricular plan I’ll respond. But if it’s just a casual conversation I won’t

> respond. If it's my mom, I'll respond right away. If they're [other students] staring at [their phones] for a long time and scrolling, they they're not doing anything quick.

This level of self-awareness and internal logic was evident in many of the students' explanation of the difference between short-term messaging that allowed them to address an immediate need, and longer conversations that could significantly distract them from their learning. However, individual variation in what was deemed important could still have resulted in classroom distraction, as the teachers argued, and well-meaning short term "checks" could have easily led down a slippery slope.

The students' comments illustrated the potential hazard presented by the "slippery slope." Numerous students displayed a casual disregard for the consequences of using their mobile phones for non-educational purposes that detracted from learning in violation of teachers' orders. They continued using their mobile phones even when they were warned by the teachers that their phones would be confiscated. A few students discussed their teachers' approach to dealing with students that regularly used their mobile phones for these purposes against the teachers' orders. One student explained, "Some students really don't care. Some teachers do warn you that they'll take the phone away, but students won't believe them." Another student confirmed, "They'll give you a warning. If you're known for having your phone out they'll probably take it." A third student from Somerville also reported getting warnings, but suggested that she usually got away with using her mobile phone.

> I sometime sneak in class and text. I get away with it 70% of the time. [When they take it) they take it away for the rest of the day. The counselor will take the

phone. Or the teacher will take it and give it to the counselor.

Although students regularly flouted district and school policies banning non-educational uses of their mobile phones, and were frequently reprimanded by their teachers, it is useful to distinguish the potentially academically-supportive use cases from the potentially detractive ones. As illustrated above, students used their mobile phones for purposes that ranged from positive (supportive of learning and/or school work), neutral (no net benefit or harm), or negative (detracting from learning and/or school work). Many of these uses could be engaged to support student learning. Districts, schools, and teachers should acknowledge and consider this variation in non-educational uses when creating district, school and classroom policies. Because of the level of nuance involved in determining these uses, administrators should consider where in the system hierarchy these determinations may be most effectively made. Students often take the lead in discovering unique unorthodox ways to use their mobile phones to support their learning. Teachers, who are closer to the students and get to know them over the course of the school year, may be best suited to make these nuanced determinations.

Educational Uses

While students frequently used their mobile devices for non-educational purposes many of the same students also used their devices for educational purposes. In many situations students preferred using their personal mobile phones for school-related work, choosing these devices over more traditional personal or school provided desktops and laptops. When asked about their preference, many of these students cited three qualities of their mobile devices that tipped the balance for them.

The devices were more *accessible*, more readily available than laptops at school and at home. Second, the mobile phones were multi-purpose tools. The one device could serve as a calculator, a camera, a music player, a reference tool and a word processor. Third, the mobile phones were also often *higher quality* and *more reliable* than personal or school provided alternatives. Students felt that they could more reliably get their work done on their mobile phones than on personal or school provided computers that were often either too slow or of limited functionality to be useful. These novel uses, which are arguably acceptable use of technology according to the districts' acceptable use policies, coupled with the students' persistence in using their phones in their classrooms for non-educational purposes such as texting, social media, and web-surfing, combined to pressure their teachers to formulate a response.

Accessibility: The mobile phones are always with them. The most cited reason for students using their phones for educational purposes inside and outside classrooms was due to the phones' eminent accessibility. All except one of the students interviewed for this study owned a mobile phone, and most of those students who did own mobile phones had owned their phones for multiple years. Because of the devices' pervasiveness, students were accustomed to using their phones in and outside of school and consequently had become both adept and addicted to using their mobile phones at all hours of the day for personal, social and educational purposes. With or without their teachers' support, the students regularly used their phones inside and outside of class for educational purposes such as accessing learning tools, reference, and even in place of traditional laptops and computers. As one ninth grade student exclaimed after discussing

how and how often she used her phone during the day, “I didn’t realize how obsessed I was with my phone until this interview.”

One of the most widely reported student-initiated, education-related use of mobile phones was students using their phones to help them remember things. Frequent uses involved jotting notes down about homework assignments, taking pictures of said assignments, and even capturing ideas for class assignments when not in class. One tenth-grade student described “taking pictures of stuff I need to remember” on her way out of class. A second tenth-grade student was more specific and mentioned “taking pictures of homework assignments” in his enumeration of the ways that he used his mobile phone for educational purposes during classes. Another student described using his phone to capture ideas for his English class, “I’m drawing beavers in English class—I found images of beavers (online via his phone) and used them to draw the beaver.”

In all three examples the students could have taken more traditional approaches to gathering the information. They could have pulled out their notebooks and written down the homework assignment. They could have looked up a picture of the beaver on a computer or physical dictionary. Instead, using their phones, which the students always had with them, presented a much more convenient option. They were already adept at using their devices and confident about the phones’ effectiveness. In such situations, using their mobile phones for educational purposes to simplify their academic lives became an obvious choice, and the teachers’ acceptance or support a secondary consideration.

Multi-purpose: Mobile phones as an educational Swiss army knife. Students also reported using their mobile phones to *replace other single-use devices* that they

commonly used in classrooms. They preferred to use their devices for these purposes because they had quick access to their devices**,** often speeding up their academic workflow. One student explained, “In science and math class people use apps all the time for timing and calculators.” When the students needed to time or calculate something, instead of using a school provided clock, a timer, or a calculator, they would simply use the device that they had with them at all time—their phones. In a more elaborate example, one student discussed another aspect of the benefit of always having quick access to their mobile phones. “It’s a lot easier than using a computer because you have to log-in, and there’s always people in a group that have a phone.” Because these devices were always present, personal, and already “logged-in,” students did not have to use valuable class time to go through the process of locating, seeking permission, and logging in to classroom computers before even getting to the work.

Other students provided similar examples of using their mobile phones to quickly access or process information for their academic work. One Cambridge student explained, “I use it in class if we’re allowed to use our phones to access the Internet [but] only for school related purposes.” Another student concurred, “Instead of grabbing stuff from a computer I just look stuff up. If the teacher asks me a question, I can look it up on the phone.” These student-initiated educational uses were more explicitly academic than the prior uses for augmenting memory to more generally aid with academic work. Students were using their personal devices to complete specific and timely academic work during class, where teachers could observe and acknowledge the efficacy of these uses.

High quality: Mobile phones as the default platform for student work.

Students also cited the perceived *higher quality* of their mobile phones when compared to other alternatives as another reason why they preferred using their devices for educational purposes. One student explained that her home computer was often not reliable. "Sometimes if my computer is not working I'll use [the phone] to do my homework on Google Docs." She explained that her laptop's weight contributed to its limited use because "sometimes I don't want to carry a heavy laptop around..." Another student reported using her phone at home to complete her writing assignment homework on Google Docs because her laptop was old and heavy, and she did not use it that often. "If I don't have my laptop with me, which is most of the time…my laptop is old and I can't close it anymore." A Somerville student explained, "At home I use a laptop sometimes but I feel like I could do more on my phone because I have apps." For these three students, their personal, always on, easily expandable-via apps, and always available mobile phones were more powerful useful, than their "old" computers. Digging a little deeper into the students' reports, the concepts of reliability and confidence in the mobile phones' suitability and readiness for use, stand out. Because the students' laptops were not always functioning, students felt it was a safer bet to employ a more dependable, more frequently used, mobile phone.

The perceived quality of mobile phones compared to more traditional computing devices also applied in school. Many of the students felt that their mobile phones were better suited for their school work because their devices were faster and/or more reliable than school computers. One Somerville student observed, "I feel like my phone is faster than the computers here." Another student expanded on that observation with a complaint

about the restrictions on classroom mobile phone use. “It’s stupid sometimes. Kids can research stuff on their phone instead of going to another room to use a computer that barely works.” This complaint crystalized the students’ broader argument against the constraints often placed on their use of mobile phones in the classrooms: banning or constraining the classroom use of these devices not only limited their potential incremental use for educational purposes, at times solely driven by students, but also harmed the students’ basic learning by preventing students from compensating for broken or less effective traditional technologies.

Although the students’ resistance to school policies limiting their student-initiated mobile phone use for educational and non-educational purposes presented many challenges for teachers, many of these student-initiated uses supported the students’ learning in ways that could benefit students and classrooms. Self-regulation, “focus” and keeping one’s self “in sync,” could certainly have a positive impact on learning. Painting all non-education related mobile phone use with the same brush could miss the potential benefits of such nuanced uses.

Students also found ways to use their mobile phones for explicitly educational purposes. These ranged from basic uses, such as quick note taking and using the phones’ calculators, to more involved uses such as conducting online research and even composing writing assignments. Taken together, these student-initiated mobile phone uses demonstrated ways in which mobile phones could be used in support of student learning. Moreover, because these uses were primarily student-driven, leveraging students’ sense of autonomy and relatedness, other students were more likely to be motivated to adopt them. Teachers could leverage this student interest and motivation to

further incorporate these devices into their classrooms in ways that further support student learning.

Teachers Respond

The restrictions on classroom mobile devices use created by both districts' school and district policies pushed teachers towards more restrictive classroom policies. At the same time, students' resistance to these policies by their continued use of their mobile phones in the classrooms for student-initiated educational and non-educational purposes pushed teachers towards more flexible classroom policies. Teachers were caught in the middle between these conflicting demands. Many teachers at both schools resorted to creating their own classroom policies that fit their knowledge and comfort levels, and that they felt responded to student needs while abiding by their interpretation of the spirit of the district and school policies. They felt that they were eminently situated to understand the context and intention of their students' mobile phone use. Consequently, they could more accurately determine which uses—educational or not—supported, harmed, or had no significant impact on their students' learning. These teacher-created policies served not only to decouple the teachers from the broader school and district policies, but also to decouple the teachers' policies from those of their colleagues.

The teachers' emergent classroom policies spanned the spectrum from more restrictive to more permissive (see Appendix B). On the more restrictive end of the spectrum, one teacher banned all student-initiated educational and non-educational mobile phone use in her classroom. She limited mobile phone use to designated times and only when part of structured, class-wide projects. On the other end of the spectrum, one teacher actively encouraged students to use their mobile phones in the classroom for both

educational and non-educational purposes. Towards the middle of the spectrum were a group of teachers who permitted student-initiated mobile phone use, but only for educational purposes. These teachers also occasionally led their students in class-wide educational activities that engaged the students' mobile phones. In setting their varied classroom policies, the teachers wrestled with how these policies aligned with district and school policies, and student demands. The teachers also expressed concern about how well the district and school policies reflected classroom realities and their teachers' experiences and expertise.

Wrestling with School and District Policies

In explaining and defending their mobile phone classroom policies, several teachers expressed reservations that the process that the districts and schools used to create their policies did not sufficiently address classroom realities. At the core of many of these concerns, teachers disagreed with their understanding of the underlying goals of these district and school policies. One teacher explained her perception of a disconnect between district policies and classroom realities, "At the district, there's like 50 and 60-year-old people making policy about Facebook. Nobody comes and talks to me and Maureen or anyone who's actually working with the kids about what the policy should be." The teacher suggested that the people that make policies were not only out of touch with the technologies popular with his students, but were also not familiar with how these technologies could be used in the classroom to support learning. Teachers like him and his colleagues who were familiar with the technologies and how they could be useful for learning, he argued, were generally shut out from the decision-making process. A Cambridge teacher echoed this idea of policy makers not getting input from teachers

when she discussed her school-level policy, “Right now we have a school admin that’s afraid of process that involves everybody—having a discussion that involves everyone... I’m not sure that anyone cares what I think.” According to this teacher, a significant part of the process’s lack of effectiveness was its failure to consider the diversity of relevant perspectives—most importantly, teachers’ perspectives. She suggested that the teachers’ more relevant student-centered perspectives were not being adequately valued.

However, given teachers’ busy schedules, being able to participate in these discussion meetings was not always feasible. One teacher explained that although she was aware of opportunities for teachers to become involved in the decision-making process, she was not able to do so given her busy schedule. “I vaguely remember emails about committees to create policies—but I was super busy.” She argued that the district could have done more to make it possible for teachers to get involved in the policy review and creation process. “They could be more aggressive about getting [teacher] representation—and even getting students involved in the process.” Another teacher echoed this complaint about limited teacher time as an obstacle to involvement in policy making, and suggested that a more effective process that involved the larger school community would result in more responsive policies. “If there was a community process around this with all stakeholders—would be great. But it comes down to time.”

In addition to complaining about the district policies and policy creation process teachers also expressed dissatisfaction with the process for communicating these policies to teachers. Many teachers suggested that part of the reason behind teachers’ reported lack of clarity and consistency around policy was due to inconsistent communication. Although school and district administrators explained that the policies were to be

communicated to teachers at meetings at the beginning of the academic year, a few teachers suggested that this communication was not effective and that they relied on their colleagues to find out about school and district policies. One Cambridge teacher, who had worked at her school for over five years, explained, “I don’t think I’ve ever heard an administrator tell me the policy. I’ve only observed the teachers. I don’t know how new teachers find out.”

However, another teacher in the same school suggested that the policies were indeed communicated at the beginning of the school year. She argued that the communication was not sufficient. The district’s policies were in so much flux that she could not depend on other teachers to understand district and school policies. The only way to stay apprised of the latest changes was through these meetings at the start of the school year. “The rules changed so much that I got most of my information at the meeting at the beginning of school.”

The fact that two teachers in the same school had contradictory experiences with their school’s policy communication process raised the possibility of an inconsistent process. That numerous teachers expressed disappointment with the policy creation process suggested that they believed that those processes were not inclusive of teachers and that a more accommodating process that involved teachers and staff members was needed. This skepticism of the policies and underlying processes, coupled with the students’ resistance, created the conditions that led teachers to turn to their own expertise and experience in creating their classroom policies.

Numerous studies have suggested that teachers filter district and school mandates through their preexisting worldviews and practices (Jennings, 1996; Reimer, 2002;

Spillane, 1999; Spillane & Jennings, 1997). Indeed, a 2013 study of school administrative staff by Larsen and Hunter (2014) found a similar filtering of district mandates through personal values and beliefs. More than half of the school staff in the study based their decision-making about how to incorporate district-mandated changes into their school practice on their core values and beliefs (Larsen & Hunter, 2014). A follow-up study that investigated principals' rationale for filtering district mandates through their belief systems found that the administrators wanted more flexibility and authority to match the school mandates to their unique context (Larsen & Hunter). According to these administrators one size did not fit all. Exceptions were the rule, and detailed mandates were untenable.

Classroom Mobile Phone Strategies

A 2004 study of teachers' classroom practice found similar patterns of classroom policies being filtered through teachers' personal philosophies and past experiences (Coburn, 2004). When faced with district mandates around new instructional approaches, teachers responded with classroom activities that incorporated the district mandate to varying degrees. The study highlighted four strategies ranging from increased resistance to increased acceptance of the new mandate. In the *decoupling* strategy teachers pretended that they were adhering to the new policies, when in fact they stuck to their personal convictions. Other teachers created *parallel structures* in their classrooms in which they alternated between practices based on the district mandates and those based on their personal beliefs. The last two groups of teachers found more value in the new policies. Some of these teachers *assimilated* the new practices into their existing beliefs creating a new hybrid approach grounded in their personal philosophies. Others

accommodated the new policies and fundamentally restructured their instructional approaches based on the new policies.

These four strategies are echoed in the complaints of teachers in this study when they argued against the districts' control over what should be considered appropriate for classroom use. The teachers argued that the districts' control over what was considered educational use ignored their expertise and familiarity with how their students learn. These four strategies could also be used to describe the teachers' approach to incorporating their students' demands into their classroom policies (see Appendix B). Teachers wanted to be able to determine what apps they could use in their classrooms. They also wanted to be able to allow their students to listen to music as long as it did not disrupt their learning. Some teachers did not even mind if their students sent text messages—as long as they did not significantly disrupt their learning.

Like the teachers and administrators in the research studies discussed above, teachers in this study ultimately centered their classroom policies on their personal beliefs and values, utilizing strategies ranging *from parallel structures* to *accommodation*. These *strategies* in turn resulted in classroom policies that ranged from highly prohibitive policies that by default restricted all use of mobile phones to teacher directed use for educational purposes, to *utilitarian policies* that took a case by case approach to student-initiated educational mobile phone use, to *permissive policies* that allowed almost all student-initiated educational and non-educational use as long as students completed their work.

Similarly, although the teachers in this study did filter the district and school policy through their own personal values and beliefs, they all expressed awareness of

their colleagues' differing beliefs and actions. Whether they were asking for the banning of the mobile devices for all uses, or seeking clear guidance that standardized teachers' approach to managing and experimenting with the devices, or simply expressing awareness of the difference in teacher attitudes and approaches to mobile phone use in the classrooms, many of teachers at both schools suggested that their colleagues' attitudes and behaviors affected them and their classroom policies.

Prohibitive Policies with Parallel Structures Strategy

Of the six teachers interviewed for the study, only one of them expressed a prohibitive attitude towards having mobile phones in her classroom. She employed a *parallel structures* strategy in creating her classroom policy, wherein she alternated between prohibiting all mobile phone use and permitting her students to use the phones for teacher-led educational purposes. This approach to creating policy allowed her to acknowledge her students' desire to use their mobile phones while remaining in her comfort zone. The resulting classroom policy was highly prohibitive in restricting students' mobile phone use to teacher-led educational purposes, generally prohibiting any student-initiated uses. The bulk of this teacher's argument centered on her observed potential of these devices to distract her students and disrupt the class—hindering teaching and preventing learning. Although the other five teachers in the study agreed that the potential for the mobile devices to distract the students and disrupt their classroom, only this teacher expressed a wish for an outright ban on students' mobile devices for all use. Whereas another similarly frustrated teacher only expressed frustration at not knowing what his school's actual policy should be, this teacher repeatedly suggested that there should be a school-wide policy banning students' mobile

phones. “Honestly, I feel like there should be a zero tolerance policy…It’s near impossible to focus on both phones and instruction…If you’re extraordinarily strict you’ll pull your hair out…Until the school takes a harder stance it’s a losing battle.”

Although this Cambridge teacher ostensibly had the authority to prohibit all student-initiated mobile phone use in her classroom, she felt compromised in maintaining such a strict policy. Because some of the other teachers that her students visited during the school day permitted mobile phones for student-initiated educational and, in some cases non-educational uses in their classrooms she felt that her students tended to bring some of those behaviors into her classroom—resulting in more distractions and disruptions. Furthermore, this teacher often taught with a co-teacher who she felt was often lax about student-initiated non-educational mobile phone use in the classroom, frustrating her ability to maintain a no phone policy. According to her view, students’ mobile phones *only* got in the way of learning and consequently should be banned from the classrooms. A school-wide policy banning mobile phones in the classrooms—aligning all teachers and communicating the same message to all students—would address both of her challenges.

However, at the same time that this teacher expressed a strong preference for a school-wide no-phone policy, she reported leading her students in activities that used the students’ mobile phones for educational purposes. These activities leveraged unique affordances of the mobile phones and would not have been possible without the devices. She discussed two such activities. “We did an activity with similar triangles where the students put the phones on the ground and backed up till they could see the light on their phone.” A second activity leveraged a barcode scanning application that the

students were asked to download onto their devices to help the students move through a scavenger hunt. "The kids downloaded a barcode app. They'd pull their phone out and scan the barcode on the board to get the next direction." She thought both teacher-led activities that used the students' mobile devices for educational purposes engaged her students.

These quotes illustrate how the teacher was wrestling with the tension created by her school's mobile phone policies and the students' drive to use their devices in the classrooms for non-educational purposes. Although she disliked the distractions and disruptions caused by these devices, leading her to seek banning the devices, she still saw educational value in these devices when explicitly used for teacher-led class-wide activities. Her latter two quotes suggest a more nuanced view about mobile phones in the classroom—that these devices were not only sources of distraction and disruption. While phones could disrupt the classroom, they could also be used for educational purposes—and thus partially address the students' push to use their devices in the classrooms. This teacher's strong dislike of mobile phones in her classroom contradicted the views expressed by some of her colleagues, and suggested that although she reported engaging the devices for teacher-led educational uses in her classroom, over time she would be less likely to continue with these teacher-led uses than her more permissive colleagues.

Utilitarian Policies as Assimilating Strategies

Towards the middle of the spectrum of mobile device permissiveness were four teachers from both schools who took a more pragmatic approach to regulating mobile phones in their classrooms. Because these teachers were more willing to acknowledge their students' preferences, respond to the students' demands, and explore the potential

for the students' mobile devices for teacher *and* student-initiated educational uses, they could be described as utilizing a more progressive *assimilating* strategy with respect to their students when developing their classroom mobile phone policy. These teachers reported engaging their students in educational activities that leveraged the phones' unique affordances. Teachers described various activities that leveraged the phones' cameras. On a field trip to the Harvard Art museum, one teacher asked her students to use their phones to take pictures of the art they observed. A Somerville teacher described a similar use, where student on a field trip were asked to take pictures and videos with their phones and text them to the school's email account for inclusion in a slideshow. According to this teacher, the goal of the activity was "to get kids' input and information on events" at the school. Though confined to some of the basic features of the mobile phones, the teachers' incorporation of the devices into the classroom allowed them to engage their students in learning related activities that constructively used their personal devices for school work.

While some teachers limited their teacher-led efforts to the phones' basic features, other teachers leveraged the ability of these personal computing devices to morph into other devices via smartphone applications. By leveraging the phone's application platforms, the teachers were able to connect the devices' higher-level functionality with the students' learning. One teacher led a classroom-wide activity that allowed her students to tap into the mobile phones' application platform. According to a student in her class, "We did an activity where everyone had to send in a phrase using an app about things we thought of as the Holocaust." The teacher then made a word cloud of the students' submissions for the class to review and discuss. The student enjoyed using the

application and thought “it was an interesting and anonymous way to see what [all the students] thought.” Students were already using applications on their phones for non-educational purposes—communication and gaming on their phones during class. By engaging this same technology for learning, teachers were able to connect with their students by leveraging their demonstrated interest and facility with this technology.

Teachers using assimilating strategies went beyond teacher-led educational uses for the students’ mobile phones. They embraced and encouraged student-initiated educational related uses. Teachers reported regularly permitting their students to use their mobile phones for educational purposes such as calculators, cameras, and notepads. One teacher explained how she encouraged her students to use the eReading functionality on their phones for classroom research. She stumbled upon this use when she observed her student using their phones to read for classroom assignments. “Kids will research an article on their phone or use it to pull up articles.” Also, “if the kids are doing independent reading they do it on their phones. Either they preferred reading electronically or it’s just more convenient.” Because students had become so accustomed to using their mobile phones for educational and non-educational purposes in other parts of their lives, using these devices for educational purposes in their classrooms was not a difficult adjustment. Recognizing the potential in these devices the teacher began actively encouraging her students to use their mobile phones as reading devices. “I actively remind them that [reading on their phones] is an option. The library is also offering more eBooks—and I’m trying to get them more aligned with the curriculum.”

Permissive Policies as Accommodating Strategies

At the most permissive end of the spectrum, one teacher reported actively encouraging her students to use their devices as they saw fit, for both educational and non-educational purposes, as long as the use did not distract them or their classmates or otherwise prevent them from completing their work.

> As long as they're still working I really don't mind. I get distracted a lot myself. If it takes you two seconds to send a quick text to get the distraction out, then that's fine… I'll see students very quickly send a text and they put it away. But if they're on it the entire time then it's an issue.

This teacher ultimately employed an *accommodating strategy*—incorporating her beliefs into her students' demands to fundamentally restructure her instructional approach. Unlike her colleagues—including those who led their students in specific activities that leveraged the phones' unique functionalities, this teacher pushed her students to take the lead and explore potential student-initiated educational uses. She argued in support of her approach to managing the mobile devices with a clearly articulated philosophy.

> People have different levels of tolerance. Some teachers listen to music while they're working and let kids use music while they're working…Teaching kids that they world is the same everywhere is madness…You just have to let the kids know how to use [the phones] in different contexts and adapt to different contexts…As long as they kids are getting their work done, I don't mind if they use their tech… if breaking the rules might help them in class, then I'm okay with breaking them.

This teacher's philosophy was completely focused on the students' learning, and she was willing to prioritize the learning with the devices over school policies that would guide or restrict classroom mobile phone use. She also supported the proliferation of different classroom policies that emerged from a school policy based on teacher preferences. Students should to adapt to different policy contexts in the school, she believed, as the resulting flexibility and adaptability is essential for the larger world beyond school.

By mentioning the "breaking of rules," the teacher acknowledged the potential conflict between her allowing her students to listen to music in class—a non-educational use and the district's concept of academic use and educational purpose. As previously discussed in this dissertation, non-educational uses of of mobile phones for purposes such as listening to music may still support learning. The teacher's assertion, "if breaking the rules might help them in class," supports this analysis. Like many of her peers she believed that she had a more accurate understanding of her students' needs and tendencies than far-removed district administrators. Unlike those peers she was confident that, with her guidance, her students could manage the gray area of non-educational uses of their mobile phones in ways that would not negatively impact their learning. When faced with the choice between student-initiated non-educational and educational uses, this teacher had decided to reframe the decision as *in support of and detracting from learning.* For her, at least, that choice was clear: any student-initiated mobile device use that supported learning was a valid use.

A couple of caveats are worth mentioning with regard to this teacher. As an art teacher she had arguably more flexibility to adjust her curriculum to students' preferences. Second, because of the multimedia nature of many of her projects and

activities, students' mobile phones were arguably more easily incorporated into her class. Indeed, her students reported using their phones for research and image capture, and even described building workflows around their phones that sped up the process of transferring images onto the school computers. Her students also reported listening to music on their phones while working, as it allowed them to focus on their work.

Faced with the challenging task of responding to conflicting demands from their schools and their students, teachers in this study used various strategies to incorporate the competing demands into their classroom policies. These strategies varied primarily by where the teacher placed emphasis when incorporating the competing demands, how much autonomy and trust they were willing to grant their students, and the level of consistency in the strategies' underlying philosophies. These strategies in turn resulted in classroom policies with varying levels of permissiveness towards the use of mobile phones in the classroom, ranging from policies that only allowed teacher-initiated and teacher-led mobile phone use for educational purposes, to policies that allowed most student-initiated uses for educational and non-educational purposes as long as the teacher felt the students were still completing their school work. This significant variation in classroom policies existed in the same schools with teachers that taught the same students.

A New Calculus

The findings suggest that the teachers at the two schools faced similar problems created by the tension between district and school policy and student demands. Although the two districts had different policies—one school permitted teachers to "opt-in" to mobile phones in the classroom, the other school prohibited students' mobile phones in

all classrooms—teachers at both schools expressed similar concerns about the guidelines created by the districts' focus on "educational purpose" and the interaction of these district policies with the school policies. At the same time that they were trying to make sense of the district and school policies, teachers also had to address their students' resistance to the policies and push to use their mobile phones in the classroom. The students wanted to use these devices for a variety of uses, including blatantly non-educational uses, questionably educational uses, and clearly educational uses.

While the clearly educational uses such as using the phones' camera or calculator for class work, or composing writing assignments on the phone, were in line with the districts' policies, some of the non-educational uses, such as texting and using social media during class, ran afoul of these policies. A third category of non-educational uses, those that may not harm or may even support student learning, inhabited a middle ground between the two more distinct categories. The need for nuance in understanding and determining this third category made a case for situating the defining of these categories closer to students and allowing their teachers to weigh in on the appropriateness of different types of student mobile phone use.

These competing demands left teachers to decide how they wanted to negotiate their classroom policies. Ultimately, the teachers mediated the conflicting demands through their personal philosophies and comfort levels, using strategies similar to those teachers have been documented to use when integrating district curricular mandates into their classroom practices. One teacher selectively chose when to adhere to district policies in her classroom. Others opted to *create* their own classroom policies that were informed by the competing demands. Finally, one teacher teacher opted to base her

classroom policies on her students' demands. These three strategies resulted in three different types of classroom policies, ranging from prohibitive to permissive.

Research studies have found that, when faced with new curriculum policies, teachers often filter these policies through their personal philosophies and beliefs (Jennings, 1996; Reimer, 2002; Spillane, 1999; Spillane & Jennings, 1997). When faced with policies about phone use, teachers have had to factor in one more stakeholder into their consideration—the students. Traditionally, when new curricular mandates are mandated by districts, teachers typically have a strong grasp on the content matter and how their students might engage with content and can make an informed decision about how to integrate the mandate into their classroom. However, when it comes to mobile devices and their potential for educational use teachers do not all have the same level of mastery as they do with traditional curriculum. They are not typically trained to teach with mobile devices. In many cases the students, who have grown up with these devices, are more knowledgeable than their teachers about the devices and their potential uses. Consequently, the introduction of mobile phones into the classroom has created a new asymmetry of knowledge between teachers and students that impacts teachers' considerations when deciding how to respond to district mobile phone policies.

CHAPTER 6: CONCLUSION AND IMPLICATIONS

Conclusion

This study aimed to explore the potential for mobile devices to be used in schools to support student learning. To explore the potential for these devices, I investigated the nuanced processes of policy creation, formal implementation, and classroom experience with regards to these policies. Most research studies in this area investigate mobile device use through the lens of individual stakeholders. This study aimed to contribute to the literature on mobile device use by providing a comprehensive investigation of policy and practice that included the perspectives of key all stakeholders (administrators, teachers, and students) involved in the process. Such a comprehensive examination would provide insight into how the different stakeholders in one system interact with each other to dictate the actual classroom strategies and policies that govern the use of these devices.

I conducted my research in two schools in two different school districts. While there were significant differences across the two sets of school and district policies, what happened in the classrooms—the sum effect of teachers' beliefs and dictated classroom policies, their students' desires, and the actual lived classroom policies—was quite similar.

Teachers at both schools expressed similar concerns about the guidelines created by the districts' focus on the "educational use" of technologies and the interaction of these district-level policies with their schools' mobile phone policies. At the same time that they were trying to make sense of the district and school policies, teachers also had to address their students' resistance to the policies and insistence on using their mobile phones in the classrooms. The students wanted to use the mobile phones they always had

with them for a variety of uses, ranging among clearly non-educational uses that were not directly in support of the production, consumption, or analysis of school work, questionably educational uses, and clearly educational uses. While the clearly educational uses, such as using the phone's camera or calculator for class work, or even composing writing assignments on the phone, were clearly in line with the districts' policies, some of the non-educational uses, such as texting and using social media during class to talk to peers about issues other than school work, ran afoul of these policies. Students also engaged in a third category of use: non-educational uses that never-the-less supported students' learning. These questionable uses were not clearly in service of the production, consumption, and analysis of school work but may have indirectly supported the students' learning.

There were significant differences in teachers' classroom practices. Instead of varying primarily between the schools, the different practices, which were present in both schools, tended to vary more within schools. When explaining their underlying rationale for their de-facto mobile phone classroom policies, most of the teachers focused their responses on their personal philosophies, their personal experience with mobile devices, and their perceptions of the students' needs and desires. Few cited district- and school-wide policies as their primary drivers. These were lesser considerations and were seen as constraints. Without a broader source of normalization, such as consistent and strictly enforced school mobile phone policies across classrooms, a clear and explicit school or district philosophy directing (not governing) technology engagement and experimentation, or the development of consistent mobile phone teacher capacity, mobile phone classroom policies varied significantly within each school. This variation in

classroom mobile phone policies was highly dependent on the teachers' personal philosophy regarding the educational potential of mobile phones in their classrooms, their personal skill and familiarity with the technology, and their awareness and receptiveness to their students' interest in using these devices. Variations in any of the three considerations would yield a different on-the-ground, mobile phone policy between classrooms.

As illustrated in the findings, teachers employed different strategies based on their personal philosophies to create classroom mobile phone policies that fit within their comfort zones (see Appendix B). These strategies indeed ranged from *parallel structures*, where teachers picked and chose when to engage the students' mobile phones, to *accommodation*, where teachers refocused their classroom strategies to respond to their student's needs. These teachers' mobile phone policies, ranging from *restrictive* to *utilitarian* to *permissive*, released increasingly greater levels of direction and autonomy to students regarding how they could use their mobile phones in the classroom for educational and non-educational purposes without teacher direction.

Although not all the teachers actually led classroom activities that incorporated students' mobile phones, they all demonstrated interest in *exploring how to effectively use* students' mobile phones to support student learning. These purposes ranged from teacher-led activities such as application-based, class-wide word clouds, to teachers allowing their students to use their phones for explicitly educational and at times, non-educational purposes. The teacher-led activities leveraged both the basic functionalities of the phones as well as the application platform provided by the phones.

Beyond teacher-led activities, teachers were also aware of how their students were already engaging in student-initiated educational mobile phone uses, ranging from taking photos and capturing notes to composing writing assignments using Google Docs. The students were exceptionally active and creative in using their mobile devices for educational purposes. Beyond the aforementioned photos, notes, and composition, students initiated other functional and creative uses of their devices for educational purposes. They used their mobile phones to look up information for class assignments and homework. They used the camera and other applications on their phones to speed up their workflow for capturing and processing images for art class. Some students even skipped typing and used the dictation functionality on their mobile phones to compose their written assignments. In many of these cases they chose their phones over traditional equipment such as school provided classroom computers, calculators, cameras, and even their own laptops.

The students did not limit their phone use to educational uses. These students, who had already become accustomed to using their phones outside the school day to connect with friends, disconnect from their physical surroundings, capture images and create their own worlds insisted on using their phones in a similar fashion during the in their classrooms. Most of these non-educational uses, such as texting and using social media for communications unrelated to school were described by most students and teachers as clearly non-educational and detracting from school work. However, many students and some teachers acknowledged the potential educational benefits of phone uses that might be considered “non-educational” such as students listening to music on their phones during class as they did their work.

Regardless of whether students and teachers found any educational benefit in these seemingly non-educational uses, these types of uses would most likely still fall afoul of the districts' acceptable use policies' vague definitions of educational purpose. Teachers believed that the district administrators lacked the context and understanding of the students' behaviors to truly determine what mobile phone uses, particularly those of the non-educational variety, supported student learning. The need for nuance in understanding and determining this category of uses made a case for situating the defining of these categories closer to the students and allowing their teachers to weigh in on the appropriateness of different types of mobile phone use.

Moreover, since district administration was primarily responsible for determining educational purpose, teacher and students would only be able to contribute their input on what constituted an "educational use" during the policy-making processes—processes in which the teachers did not appear to have faith. Cambridge teachers lamented the lack of teacher input in these processes, pointing at lack of teacher time and ability to engage in the process. Somerville teachers simply called out the policies as being made by "50 and 60 year olds" at the district level. These teacher comments implied that the two districts would have benefited from creating policy processes that got teachers and students more involved. Such improved processes would introduce more diverse and perspectives into the final mobile phone policies.

Teachers at the two schools not only complained about the perceived disconnect between what was needed in the classroom and what was permitted by school and district policies, they also complained about the perceived disconnect between different teachers' policies in the same school, which is of concern since most of these teachers taught the

same students. Indeed, teachers at both schools appeared to express more exasperation when discussing the variation of adults' classroom policies and the implications for teachers than they did when discussing their students' rampant rule-breaking. Although the act of loosely coupling classroom policies to the school policies (i.e., allowing individual teachers to decide their own policies on use) would have ostensibly empowered teachers to better match their mobile phone policies to their espoused pedagogical styles, the majority of the teachers in the study expressed concern about this broader policy approach.

One Cambridge teacher argued for a more tightly coupled policy in which teachers' classroom policies were in lockstep with the school and district policies as a means of enforcing her preferred no-phone use policy across her school. However, most of the other teachers argued for tight-coupling as a means for providing clarification of mobile device-related expectations for all teachers. These teachers wanted alignment among teachers about approved/disapproved non-educational educational uses. Tight-coupling, the argument went, would normalize mobile phone policies and teacher strategies across classrooms, and prevent students from having to adapt to different mobile phone policies in each class. One Somerville teacher suggested that this alignment would prevent students from comparing across classrooms and becoming upset when policies were inconsistent. Two Cambridge teachers argued that such a normalized approach to classroom mobile phone policy would present a united front that would facilitate teachers' management of their students' push to use their phones in their classrooms for student-initiated educational and non-educational purposes. Potentially in conflict with the teachers' desire for normalization of classroom policies, teachers also

wanted the flexibility to experiment pedagogically with uses that may typically be considered non-educational, but potentially still supported their students' learning. If allowed flexibility, teachers' experimentation and determination of which educational and non-educational uses supported learning in their classrooms could still vary by individual teachers' mobile phone knowledge, skill, and disposition.

Students were generally not as concerned about the non-standardization of classroom policies across their teachers. Most of the students across the two schools did acknowledge variation in mobile phone use policies across their different classrooms. Indeed, some of the students cited these variations, and the fact that students still used their mobile phones across the different classroom policy climates for non-educational purposes, as proof of the futility of the more restrictive classroom policies. However, none of the students explicitly complained about any challenges related to the variation in teacher classroom mobile phone policies.

This difference between students and teacher concern was notable in that it challenged the teachers' assertion that variations in teacher mobile phone classroom policies created classroom management challenges as students attempted to port more permissive policies into classrooms with more restrictive ones. Perhaps students would still push to use their phones for student-initiated educational non-educational purposes even if the mobile phone policy were more aligned across classrooms. As one of the Somerville students in a relatively permissive classroom explained when she recounted how she would furtively text when her teacher allowed her to use her phone to look up class-related topics, "[The teacher] doesn't find out." If students are not really concerned about the variations in their teachers' mobile phone- related classroom policies, and are

going to demand to use their mobile devices for non-educational *and* educational purposes in the classroom, then perhaps teachers should focus their energies on embracing this interest. They should use their nuanced understanding of their students' needs and behaviors to determine which uses have the potential to support students' learning and explore how to engage these devise for those uses.

Limitations

Several limitations to this study could impact the reliability, validity, and generalizability of the research. Future studies exploring the potential for mobile devices to support learning could strengthen their findings by addressing these limitations.

The research methods included semi-structured interviews and review of relevant school and district documentation, but included minimal participant observation. Extended participant observation of classrooms and other within-school settings could have yielded additional relevant data. Also, because many of the students reported using their mobile phones for educational purposes outside of the school and classroom, observations of students outside of the school might have also produced relevant data.

The small sample size, particularly that of teachers and administrators in the study, could have provided a limited and non-representative sample of the teacher philosophies and classroom policies at the two schools. The potential bias introduced by the small sample of teachers was further exacerbated by the snowball sampling methodology used in choosing the teachers. The teachers in this study were chosen from a larger selection of teaches recommended by school administrators. Although the school administrators were specifically asked to recommend teachers with varying levels of expertise with mobile phones, the selection of teachers that they presented for

consideration could have been intentionally or unintentionally non-representative of the individual schools' teacher populations thereby introducing further bias into the teacher sample.

The small sample size of teachers and students were also not sufficient to explore the experience of particular subgroups. For students and teachers, being able to examine the experience of certain subgroups by gender, race, and ethnicity might have provided additional relevant data. For teachers, a larger sample size might have permitted the examination of group experiences by subject taught, age and tenure. Such examination might also have provided relevant data.

Although the two school districts had similar racial demographics, the two schools did not. Moreover, without access to student records to determine socio-economic background, the participants at the two schools could not be matched or balanced. Because the research literature suggests that mobile phone ownership can vary by race, not having a sample of students that were balanced by race could have introduced variations in the findings.

The vastly different sizes of the two schools' student populations (77 versus 1880) could have also impacted the findings. Schools of such different sizes would be structured and governed differently. The different sizes of the schools and resulting governance structure could have affected the observed patterns of teacher policy implementation as much or even more than the school and district policies. Although teachers at both schools reported feeling influenced by their peers' mobile phone policies, teachers at the smaller school with fewer staff and students, and more interaction between

staff, might have been more influenced by peers and administrators than their counterparts in the larger school.

The research did not seek to gain access to the content of student messages and social media. Being able to review when students were actually texting or engaging in other social media use instead of engaging in educational uses such as using the phone's calculator, conducting searches for academic content, or taking notes for class would have permitted the comparison of this data with students' reports of their actions and enabled greater accuracy in classifying the type of mobile phone use students were actually engaging in.

The limitations described above were mostly due to the difficulty in gaining access to schools and participants. Once access to participants was gained limited time was available to interact with the participants, resulting in short interviews and limited opportunities for participant observations. More advanced and strategic planning for gaining expanded access to participants would strengthen the reliability, validity, and generalizability of future studies employing a similar research methodology.

Implications

Several implications arise from the research findings. The findings point to certain areas in the body of literature on mobile phone use in schools that could benefit from additional scrutiny. First, the mobile phone coupling strategies discussed in this study could be used to investigate the relative levels of alignment between mobile phone policies from district central offices and classrooms policies across a larger number of

schools. Examples of schools or districts that were tightly coupled and loosely coupled with more and less permissive policies would help contextualize the findings in this study.

Studies comparing the rollout of mobile phone policies in individual schools or groups of schools to the rollout of other policies, i.e., changes in curriculum, pedagogy, etc., could also be helpful in attempting to isolate any unique differences in teachers' responses to technology policies compared to other types of policies. One could argue that the introduction of technology, particularly mobile phones, into the classroom can shift classroom power dynamics in ways that differ significantly from traditional teacher introduction of new policies or curricula into their classrooms. Students who have grown up with mobile phones tend to relate differently to these devices than their teachers do, and in many cases are more familiar and knowledgeable about their potential educational uses. Teachers who become expert at classroom implementations of these devices generally would have had to learn these new uses. Meanwhile, the technology changes at an ever increasing pace—shifting the sand under the teachers' feet.

The findings also indicate some practical implications for schools. As suggested above, schools should carefully consider the interplay between their mobile phone policies and their school structure. School structures in which students are taught by multiple teachers throughout the course of a day create a highly interdependent experience from the student perspective. This interdependency might not be seen as clearly from an administrator's perspective when policies are being designed. An organizational chart of a school would likely show teachers being connected, perhaps at a cluster, department, or grade level, but would not necessarily illustrate the level of

connection that students experience as they go through their days. The teachers in this study who complained about the lack of consistency in mobile phone policies at the school level were in part suggesting that student experiences needed to be normalized across the students' personal classroom network, otherwise these policies would be left up to the whims of individual teachers resulting in wildly varied classroom practices and resulting student experiences. However, the teachers also asked for flexibility to determine what mobile phone use, educational or not, was appropriate for their students. This desire for autonomy could come into conflict with the desire for normalization. A broader school vision, or guidelines to determine what uses are acceptable in the classroom could address this potential conflict.

Adding student voice to the policy-making conversation, at either the district or school level, could help illuminate the hidden patterns of mobile phone use that might typically be ignored in traditional deliberations. Understanding the extent to which students use their phones inside and outside the classroom could push administrators and policy makers to acknowledge and even embrace these student-directed uses. Students in the study discovered pragmatic uses of their phones for educational purposes that extended beyond the school day and school walls. These students also regularly used their mobile phones to replace personal and school supplied equipment, citing the ease of use and access of their mobile devices in comparison to the equipment they would replace.

The *portability, personalization,* and *ever-present nature* of these devices present unique opportunities for learning. The fact that students often prefer to use their personal devices instead of school provided equipment purchased at not-insignificant expense

provides additional impetus for schools and districts to explore the potential of these devices to support student learning. Students could help their teachers and policymakers experiment with the mobile phones to determine a broader range of educational uses and non-educational uses that support learning. Schools and districts would benefit from understanding the phones' potentially unique affordances through teacher and student pedagogical exploration and experimentation with these devices.

The taxonomy of mobile phone uses that I have described in this dissertation could prove useful to schools and districts in their attempt to govern student mobile phone use in classrooms (see Appendix A). This taxonomy differs from the 2014 Brown taxonomy that I reviewed in that this taxonomy categorizes student and teacher mobile device uses, whereas the Brown taxonomy focuses primarily on teacher philosophies about how appropriate different types of student mobile phone uses are for the classroom. I present a simplified version of Brown's taxonomy when describing teacher strategies (see Appendix B). Although the districts may still focus on data protection and student safety, they may consider permitting schools to determine, within that bound, what mobile phone uses support student learning, irrespective of direct educational use.

Schools could then consider using the proposed taxonomy of uses to help their teachers determine which common teacher and student-directed mobile phone uses are *clearly* in support of student learning, which are not, and which, in that third category, may need further investigation by teachers and students. Schools could then set school-wide recommendations for classroom mobile phone policies while leaving the ultimate determination to teachers. As teachers and students explore these fringe uses teachers can

share findings of promising uses with their colleagues and the school can revise its school-wide recommendations.

Districts and schools should also consider creating and communicating a clear philosophy regarding the use of mobile phones in the classroom. This study identified three prominent strategies—parallel structures, assimilation, and accommodation (see Appendix B). Understanding these strategies and how they relate to mobile phone use-cases could help schools define and articulate such a philosophy. Much as many organizations use their mission and core values to inspire and guide employees, schools might consider using their mobile phone philosophy, together with the recommendation of appropriate uses, to guide teachers towards uses that support students' academic success. Teachers in our study expressed different levels of experience and comfort with mobile phones in the classroom, and professed different philosophies about their use. Establishing, communicating, and providing support, not solely around skills and knowledge, but also disposition, through a clearly articulated philosophy that rallies teachers across the skills and knowledge spectrum would help address this variation. Such an approach would help teachers commit to exploring the potential for their students' mobile phones to support student learning could help school and districts motivate and guide teachers to acquire the skills and knowledge they need. Much like their students needed to have a sense of autonomy and relatedness in addition to competence to feel motivated in class, teachers could benefit from more than training on skills and knowledge about mobile phone use for educational purposes. Providing all teachers in a school with a clear shared vision and philosophy (relatedness) that privileges teacher-directed experimentation (autonomy) with mobile phones towards

student learning could provide the motivation to encourage teachers to explore the potential of these devices to support learning in their classrooms.

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Appendix A

Mobile Device Use Taxonomy

Taxonomy of mobile phone use in classrooms. Some teachers permit the non-educational uses that are neutral or in support of learning.

Student-Initiated Use	Examples of Use
Educational Use (Inside and Outside of School)	Using as Calculator, To Look Up Information, To Compose Schoolwork and homework
Non-Educational Use	
*Potentially Neutral Impact on Learning**	*Short "Breaks" for reviewing texts or social media*
*In Support of Learning**	*Listening to Music while Working to "Focus"*
Harmful to Learning	Extented Text Messaging or other Social Use During Class Activity

Teacher-Initiated Use	Examples of Use
Educational Use	
Supporting Student-Initiated Use	Suggesting Educational Related Apps and Resources to Students for their Individual Work
Teacher Directed	Interactive Classroom Activity Leveraging Students' Phones
Non-Educational Use	
In Support of Learning	Student-Teacher Texting for Student Support

Appendix B

Classroom Policies

Types of classroom policies developed by teachers.

Type of Classroom Policies	Use Allowed
Prohibition	None
Restrictive (only teacher initiated/led)	Teacher Initiated/Led
Utilitarian	Teacher-Initiated & Student Initiated for Educational Use
Permissive	Teacher Initiated/Led & All Student-Initiated Educatoinal Uses and Non-Educational Uses That Are Not Harmful to Learning

Appendix C

Teacher Interview Script

- Can you tell me a bit about your school-related daily routine; from the time you leave for work till when you leave work? Also, how do you use mobile technology for your personal use during these times and throughout the school day?
- Can you tell me a bit about your primary mobile device and how you typically use it? What do you use it for mostly? Can you tell me about one instance? What was the most "unusual" use you've had for it?
- How do your students use their phones in the school—that includes in and outside of class as long as it's in the school building. Can you tell me about a time when you observed students using their devices in the school building? For what purpose?
- How do you and your students use mobile devices in the classroom? Can you tell me about an activity in which students were allowed to use their devices? How did this go? Where did this activity originate? Are there other condoned (non-activity) uses?
- What do you think your students think about your classroom mobile device policies?
- What are your school and district policies on the use of these devices in the school? How did you learn about them? What do you think of them?
- How were these policies made? Have you ever been involved in the policy development? How? What do you think of the process for making these policies?
- (Will present a copy of school policies/rules) Here is the district's media use policy? What are your thoughts?

Appendix D

Student Interview Script

- Can you tell me about your work-centered daily routine, starting from leaving for school and ending with leaving the school building?
- Can you tell me a bit about your primary mobile device and how you typically use it? What do you use it for mostly? Can you tell me about one instance? What was the most "unusual" use you've had for it in the last week?
- How do you use your phone in the school—that includes in and outside of class as long as it's in the school building? Can you tell me about a time when you used in the school building? Can you tell me about a classroom activity where you used your mobile device? For what purpose? What about outside of school? On the way to or from school? Or for homework?
- What do your teachers say or do about your mobile use (or students' use in general). Why do you think the say these? Can you tell me about a time your teachers spoke to you or another student about mobile technology use?
- What are your school rules about mobile technology use? How do you know this? Do you think most students know these rules?
- (Will present a copy of school policies/rules) What do you think about these rules? What do you think most of your friends think about these rules? How do you know?

Appendix E

Administrator Interview Script

- Can you tell me a little bit about your work? How are mobile technology policy and use involved in your job?
- What are the district's policies that govern the use of mobile technologies?
- (Will present school policies for reference) How did these policies arise? Who's involved in developing these policies? How do state-level laws impact your policies? When was the last time these policies were amended? Can you tell me a bit about the process?
- How are these policies communicated? Who does the communication? Does it come from the district to the schools? Via what medium or media? Has the method of communication changed over time? How effective to you feel this communication is, and why?
- How do you know if these policies are being carried out? In your opinion who are the different stakeholders involved in translating policy into action? Is there a standard protocol for this translation? How well does it work? Can you give me an example of when this translation worked notably well, or poorly?
- What happens when there's a disagreement on policy at the different levels? Can you tell me about a time when this happened? How was it resolved?

Appendix F

Cambridge Acceptable Use Policy

It is the policy of the Cambridge Public Schools that all technology used for the purpose of electronic communication, including without limitation, technology used to access the Cambridge Public Schools' network, information systems and data, the Internet and all electronic devices issued to staff and/or students by the Cambridge Public Schools (such as computers, telephones, etc.) and all peripheral devices for printing, storing, archiving, duplicating and receiving information regardless of location (hereinafter referred to collectively as ("Computer Network and Electronic Devices") will be used in a responsible, legal and ethical manner.

The Cambridge Public Schools Computer Network and Electronic Devices are established for a limited educational purpose, and have not been established as a public access service or a public forum. The Cambridge Public Schools has the right to place restrictions on the use of the Computer Network and Electronic Devices it issues, and to require users to abide by system rules and School Committee policies, including but not limited to, the Cambridge Public Schools' Non-Discrimination Policy and Prohibition Against Sexual Harassment and the Cambridge Public Schools' Anti-Bulling Policy and Bullying Prevention and Intervention Plan and to protect the confidentiality of student record information and personnel record information.

While there are many valuable resources on the Internet, there also are many sites that can be considered inappropriate for students and serve no educational value. All individuals using the Internet must use the Computer Network and Electronic Devices responsibly to ensure it is only used for educational purposes, and must be consistent

with the academic activities of the Cambridge Public Schools and will be under the supervision of Cambridge Public School staff. By using the Cambridge Public Schools networked information resources, both student and adult users are agreeing to accept this policy.

Use of the Cambridge Public Schools Computer Network and Electronic Devices, including without limitation networked information resources, for any illegal or commercial activities is prohibited.

The Cambridge Public Schools uses a filtering system designed to prevent access to educationally inappropriate sites, including those that contain material that is obscene, pornographic or harmful to minors. However, it is important to understand that no solution is perfect and the Cambridge Public Schools cannot guarantee that students might not access an inappropriate site. It is the student's responsibility to report any inappropriate site to a teacher and return to the educational topic assigned.

Teachers, administrators and other school personnel who are using the Internet as part of their teaching may call the Cambridge Public Schools Information, Communication and Technology Services (ICTS) department to request that a specific site be blocked or unblocked. Such decisions will be made by those responsible for monitoring the CPS filtering system in consultation with appropriate school personnel.

Use of the Cambridge Public Schools' Computer Network and Electronic Devices, including Internet access and e-mail, and other electronic devices (such as cell phones and/or PDAs) is a PRIVILEGE and not a right. It is important for all Cambridge Public Schools employees, students and the parents/guardians of students to understand that refusal to sign the Acknowledgement of Receipt of the Acceptable Use Policy and/or

any violation of the Cambridge Public Schools Acceptable Use Policy may result in the loss of computer, Internet, computer network, other electronic devices and/or e-mail privileges, and/or disciplinary action, and/or prosecution under state and federal law.

The Cambridge Public Schools makes no warranties of any kind, whether expressed or implied, for the services it is providing. The Cambridge Public Schools will not be responsible for any damage you suffer including but not limited to, loss of data, interruption of service, delays, non-deliveries, or mis-deliveries caused by any reason. The Cambridge Public Schools is not responsible for the accuracy or quality of the information obtained through or stored on the network, and use of any such information is at your own risk. The Cambridge Public Schools will not be responsible for financial obligations arising through the use of the Computer Network and Electronic Devices.

It is the policy of the Cambridge School Committee and the Cambridge Public Schools that all transmission of electronic communications and storage of all information is subject to this Acceptable Use Policy, as applicable. All electronic information transmitted by, received from or stored is considered property of the Cambridge Public Schools and/or Cambridge School Committee, as applicable, and is subject to random, suspicionless monitoring, archiving and retrieval. It is important for all Cambridge Public School employees, students and parents/guardians of students to understand that there is no reasonable expectation of privacy with respect to the use of Cambridge Public Schools Computer Network and Electronic Devices, including without limitation, Internet access and email, and that there is no reasonable expectation of privacy with respect to the content of electronic communications made to or from the Cambridge Public Schools Computer Network and Electronic Devices, including Internet access and email no matter

whose electronic communications equipment is used. The Cambridge Public Schools and Cambridge School Committee can and will monitor and investigate the use of email files, computers, hard drives and other electronic communications files, systems, devices and platforms regardless of whether accessed in school, in work or remotely if linked directly to the school district services.

Responsible network users will not use the Cambridge Public Schools Computer Network and Electronic Devices**,** including without limitation Internet access and e-mail:

(a) for commercial purposes of any kind

(b) for political lobbying, although users may use the system to communicate with representatives and to express his/her opinion on political issues

(c) for illegal or criminal activities

(d) for posting, disclosing or otherwise disseminating personal contact information about themselves or other people, including name, address, telephone, school or work address, without the prior permission of a school administrator, and the prior written permission of the individual whose personal contact information is to be posted

(e) for posting, disclosing or otherwise disseminating student record information without the prior permission of a school administrator, and the prior written permission of the student's parent/guardian unless such disclosure or dissemination is permitted by Massachusetts student record regulations

(f) for posting or otherwise disseminating a message that was sent to them privately without permission of the person who sent the message. This provision does not prohibit a user from promptly disclosing to a teacher or school administrator any message they receive that is inappropriate or makes them feel unsafe

(g) to threaten, humiliate, bully, harass, intimidate or send offensive information to another person or about another person

(h) for posting chain letters, engaging in spamming or engaging in any other inappropriate form of communication over the computer network

(i) for posting, disclosing or otherwise disseminating personnel record information without prior permission of a school administrator unless such disclosure or dissemination is permitted by federal or state law

(j) for viewing, possessing, posting, disclosing, sending, sharing or otherwise disseminating sexually explicit digital pictures, text messages, emails or other material of a sexual nature on any computer, cell phone or other electronic device regardless of whether federal or state child pornography law is violated

(k) for activities which disrupt the educational environment

(l) for unethical activities, such as cheating on assignments or tests or engaging in plagiarism

(m) for activities that invade the privacy of others for personal use; in other words, the Cambridge Public Schools' Computer Network and Electronic Devices should only be used for business and/or school purposes

(n) to engage in any other conduct which violates any Cambridge Public Schools' policy and/or the provisions of the Cambridge Public Schools Rights and Responsibilities Handbook or school-based rules in any way

(p) to permit students to interact with any websites that require input of personal or student identifiable information (such as name, address, telephone number, email address, etc.) unless the use of such website has been approved by the Cambridge Public Schools Information, Communication and Technology Services Department.

(q) to violate the provisions of M.G.L.c. 71, §37O, including its provisions of regarding bullying, cyberbullying and retaliation.

Responsible network users will:

(a) never reveal personal information about any user, such as address, telephone number, credit card number, social security number, unless express written permission is granted; and student users will never agree to meet with someone they meet on-line without a parent/guardian's approval

(b) notify a system administrator of any security problems he/she identifies on the Computer Network and Electronic Devices

(c) be responsible for the use of the Computer Network and Electronic Devices and account(s) at all times and never divulge his/her password(s) for any device or account to anyone

(d) recognize that there is no privacy in the contents of e-mail, data or personal files on the Computer Network and Electronic Devices or any part thereof, and that all electronic devices and the Computer Network and Electronic Devices are subject to archiving, routine maintenance, access and monitoring of messages and files may be accessed in appropriate circumstances

(e) promptly disclose to a teacher or school administrator any website that they locate or receive that is inappropriate or makes them feel unsafe

(f) not attempt to gain unauthorized access to the Cambridge Public Schools Computer Network and Electronic Devices or any other computer network or go beyond the user's authorized access, make deliberate or malicious attempts to disrupt the Computer Network and Electronic Devices or destroy data by spreading computer viruses or by any other means, or otherwise vandalize, tamper with, destroy or interfere with the Computer Network and Electronic Devices, with programs, data, files or any other electronic information or devices or attempt to vandalize, tamper with, destroy or interfere with the Computer Network or Electronic Devices, with programs, data, files or any other electronic information or devices

(g) honor the legal rights of software producers, network providers, copyright and license agreements

(h) not use the system to access material that is profane or obscene (i.e., pornography), that advocates illegal acts, that advocates violence or discrimination toward other people (i.e., hate literature), or that is illegal (i.e., gambling)

(i) comply with the policies of the Cambridge Public School Committee and Cambridge Public Schools, including without limitation, its Non- Discrimination Policy and Prohibition Against Sexual Harassment, Non- Tolerance of Hate Crimes Policy and Anti-Bullying Policy and Bullying Prevention and Intervention Plan in connection with the use of the Computer Network and Electronic Devices, including without limitation, the computer system and email

(j) use the same level of care, judgment and professionalism in communicating on the Computer Network and Electronic Devices, including without limitation, the computer system and email as they would for other written communications of the school department, including without limitation those on school department or individual school letterhead

(k) report any incidents or receipt of threats, humiliation, bullying, cyberbullying, retaliation, harassment, intimidation or offensive communications (whether via email, text message, social networking site or otherwise) in accordance with the provisions of the Cambridge Public Schools' Non-Discrimination Policy and

(l) when posting material in a distance learning course, ensure that the posted material is made available only for students officially enrolled in the course for which the transmission is made, whether such transmission of digital information is a distance education course or a supplement to a live course; ensure reasonable measures are implemented to prevent retention of works longer than the class session and prevent unauthorized dissemination of materials (i.e., use passwords, user and location authentication through Internet protocol checking, content timeouts, print disabling, and disabling the cut and paste tool), provide clear notice to students that the work is protected by copyright and only posted material that is lawfully made, acquired and part of a systematic mediated instructional activities for the class under the control or supervision of the instructor, used in a manner analogous to performances or displays in a live classroom and the amount of material used must be comparable to the amount used in a live classroom setting and not post any digital educational works.

(m) ensure students are educated about appropriate online behavior, including interacting with other individuals on social networking sites, chatrooms and cyberbullying awareness and response

(n) follow all Cambridge School Committee policies, Cambridge Public School guidelines as well as any additional guidelines established by classroom teachers when publishing work on-line

(o) not attempt to gain unauthorized access to the data, work, files, folders or any other electronic information of any other user of the Cambridge Public Schools Computer Network and Electronic Devices or any other computer network or make deliberate or malicious attempts to disrupt, destroy, vandalize, tamper with or interfere with the Computer Network and Electronic Devices, with data, work, files, folders or any other electronic information of any other user of the Cambridge Public Schools Computer Network and Electronic Devices or any other computer network

Adopted: September 6, 2011

Appendix G

Somerville Public Schools

NETWORK ACCEPTABLE USE POLICY FOR STAFF

This **Network Acceptable Use Policy for Staff** (hereinafter referred to as the "Policy") shall serve as a statement on the appropriate use of the various technology resources available to all authorized staff of the Somerville Public Schools (hereinafter referred to as "SPS") including but not limited to computers, the Network, electronic mail system (e-mail), websites, Internet access, telephones, facsimile machines, printers and other peripherals, software, cellular and hand held devices.
For purposes of the Policy, "staff" refers to SPS employees, volunteers, substitutes, student teachers, interns, contractors, and any other person who is provided with email, Network or internet access by the SPS. This Policy may be updated from time to time and amended by the School Committee, upon the recommendation of the Network Administrator and the Superintendent.

PURPOSE

The SPS recognizes the important role of technology as an invaluable resource to assist staff to successfully perform the duties associated with their role in the SPS. Staff are reminded that the use of technology resources is subject to the same management oversight as other employee activities. The Network is the property of the SPS and may be used only for educational and administrative purposes that are approved by the SPS.

USER RESPONSIBILITIES

Staff members are required to read, understand and follow this **Policy** before accessing the SPS Network and must acknowledge, by electronic or written form, that the employee has read and will comply with the **Policy**. Staff will be held responsible for ensuring that their activities adhere to the **Policy** and to generally-accepted educational and professional standards as outlined in other applicable SPS policies. Staff with questions regarding the application or meaning of this **Policy** are encouraged to communicate with the Network Administrator or the Director of Operations to obtain clarification.
Responsible use of the SPS technology resources by staff includes, but is not limited to, the following:

- Not interfering with the normal and proper operation of SPS computers, Network, e-mail system, website sections, or

Internet access;
- Not adversely affecting the ability of others to use equipment or services unless specifically authorized;
- Not conducting oneself in ways that are harmful or deliberately offensive to others;
- Not using the technology resources for illegal purposes;
- Not changing files that do not belong to the user unless specifically authorized;
- Not storing or transferring unnecessarily large files;
- Not creating, transferring or otherwise using or accessing any text, image, movie, sound recording or electronic or digital file that contains pornography, profanity, obscenity or language that offends or tends to degrade others, especially that deemed "harmful to minors";
- Not attempting to install any software on computers;
- Not downloading software from the Internet;
- Not sharing personal passwords or personal information;
- Not leaving personal files open or leaving computer sessions unattended;
- Using the technology resources only when authorized to do so as outlined in this **Policy**;
- Changing passwords regularly or whenever current passwords may be known to others;
- Notifying the Network Administrator if you learn that others are utilizing District technology resources for unlawful or suspicious activities.

ACCEPTABLE USE

Use of the Network is a privilege and not a right and any use of the Network must be consistent with and directly related to the educational objectives and business purposes of the Somerville Public Schools. Violation of any of the terms of this **Policy** may result in the suspension or termination of Network privileges and / or disciplinary action up to and including termination of employment. Violations of any provision of this **Policy** that constitute a criminal offense may also result in criminal prosecution.

The following actions violate the Policy:
- Use of the Network for personal or recreational purposes or activities.
- Sending e-mail to groups (e.g., **"**list serves") that are not job-related without permission;
- Accessing discussion groups or "chat rooms" that are not job-related;

- Use of the Network to buy, sell or advertise any goods or services;
- Use of the Network for gambling purposes;
- Use of the Network for purposes associated with political campaigning, including but not limited to attempts to influence ballot questions or to promote or oppose a candidate for public office;
- Use of the Network to transmit profane, obscene, vulgar, sexually explicit, threatening, defamatory, abusive, discriminatory, harassing, criminal or otherwise objectionable messages or materials. (Employees are also prohibited from visiting Internet sites that post such materials and downloading or displaying such materials.)
- Use of the Network for any illegal purpose or in support of illegal activities or in a manner that violates any federal or state law or statute, or an activity prohibited by any Policy of the SPS including but not limited to the use or dissemination of copyrighted materials;
- Revealing one's own password, using another person's password or pretending to be someone else when using the Network;
- Accessing, reading, altering, deleting or copying another user's messages or data without express written approval;
- Using technology resources for employee union business;
- Using technology resources for promoting, supporting or celebrating religion or religious institutions;
- Using profanity, vulgarities, obscenity or other language which tends to be offensive or tends to degrade others;
- Attempting to log-on to the Network as the system administrator;
- Using encryption or security measures to avoid monitoring or review in the ordinary course of business or routine maintenance by the system administrator;
- Using harassing, racial, sexist or discriminatory remarks and other antisocial behaviors;
- Wasting limited resources, including paper;
- Using invasive software such as "viruses", "worms" and other detrimental activities;
- Sending "chain" type letters and unsolicited bulk mails (Spamming);
- Sending hate mail, anonymous messages or threatening messages;
- Attempting to harm, modify or destroy data of another user.
- Attempting to gain unauthorized access to the Network, including but not limited to the use of personal hardware, and attempts to override the domain policies of the Network.
- Involvement in any activity prohibited by law or school District policy.

Use of the District's technology resources for any altruistic or charitable purpose must be approved in advance by the District.

If staff are not clear as to whether a specific use of the SPS Network or other technology resources is appropriate or acceptable they should seek clarification from the Network Administrator or the Director of Operations.

CYBER-BULLYING

Commonwealth of Massachusetts, Bill S2404, Section 5, defines Cyber-bulling as:
"…bullying through the use of technology or any electronic communication, which shall include, but shall not be limited to, any transfer of signs, signals, writing, images, sounds, data or intelligence of any nature transmitted in whole or in part by a wire, radio, electromagnetic, photo electronic or photo optical system, including, but not limited to, electronic mail, internet communications, instant messages or facsimile communications. Cyber-bullying shall also include (i) the creation of a web page or blog in which the creator assumes the identity of another person or (ii) the knowing impersonation of another person as the author of posted content or messages, if the creation or impersonation creates any of the conditions enumerated in clauses (i) to (v), inclusive, of the definition of bullying. Cyber-bullying shall also include the distribution by electronic means of a communication to more than one person or the posting of material on an electronic medium that may be accessed by one or more persons, if the distribution or posting creates any of the conditions enumerated in clauses (i) to (v), inclusive, of the definition of bullying."

In accordance with the SPS zero-tolerance **Bullying Prevention Plan,** Cyber-bullying is prohibited on school grounds, property immediately adjacent to school grounds, at school-sponsored or school-related activities, functions or programs (whether on or off school grounds), at bus stops, on school busses or other vehicles owned or operated by the SPS or their contractors, or through the use of technology or electronic devices owned, leased or used by the District, regardless of whether the Cyber-bullying occurs on or off the Network.

MONITORED USE

All communications that are created, transmitted or retrieved via the SPS Network are the property of the Somerville Public Schools and should not be considered to be confidential. The SPS maintains data backup resources that store all electronic communications - including those that are deleted by the user. The SPS reserves the right to access and monitor all messages and information on the system, as it deems necessary and appropriate to

identify abuse by users of the Network to ensure the proper use of resources, to conduct routine maintenance and to enforce the terms of this Policy.

As necessary, any and all electronic communications may be disclosed to law enforcement officials in response to proper requests or to other third parties in the context of proper requests in the course of litigation, without the prior consent of the sender or receiver. All users of the SPS Network are considered to have consented to such monitoring and disclosure.

Users are reminded that e-mail messages are public records, subject to disclosure under G.L. c. 66, §10. Additionally, electronic documents are subject to disclosure in litigation. Users of the SPS Network are to avoid sending documents or information containing confidential or sensitive material, such as student record and personnel information, via the Network, due to concerns relating to the security of such documents or information. Employees should not discuss litigation in e-mail messages, because such messages are not privileged and are subject to discovery in litigation against the SPS.

LIABILITY

The Somerville Public Schools assumes no responsibility or liability for:

- Any unauthorized charges or fees incurred as a result of use of the system/Network, including but not limited to telephone charges, long distance charges, per minute surcharges and/or equipment or line charges;
- Any financial obligations arising out of the unauthorized use of the Network for the purchase of products or services;
- Any user data, information, or materials stored on the Network;
- Any cost, liability or damages caused by user violation of this Policy, or any other inappropriate use of electronic resources of the SPS;
- The SPS makes no guarantee, implied or otherwise, regarding the reliability of the data connection, and shall not be liable for any loss or corruption of data resulting while using the system/Network.

Appendix H

CRLS Electronic Device Policy (From Student Handbook)

ELECTRONIC DEVICES
CRLS policy is predicated on the notion that we need to teach students how to make appropriate decisions regarding the use of electronic devices. Appropriate use of electronic devices such as cell phones and headphones are permitted **during passing time only** and in the cafeteria during lunch time.
Inappropriate use of technology
Disrupting others

- Cheating
- Inciting/promoting fight
- Harassment/bullying/cyberbullying/sexting

Cambridge Rindge and Latin School Opportunity, Diversity, Respect

- Personal videos/pictures/voice recording
- Texting/calling (**leaving class to text/call**)
- **In hallways/bathrooms during class time**
- During direct instruction
- In a meeting
- During assemblies/performances/presentations
- In the auditorium
- In a school office
- During the pledge of allegiance/playing of national anthem
- While in line in the cafeteria, credit union
- When addressing adults
- Standardized testing (MCAS/SATs)
- **In a class without explicit teacher permission If a student uses any of these devices inappropriately, the student will be referred to the Dean of Students**. Any subsequent offenses will be considered defiance of school authority and students will be disciplined accordingly.
- FIRST OFFENSE: warning
- SECOND OFFENSE: Confiscated*, returned at the end of day
- THIRD OFFENSE: Confiscated, detention (returned after completed detention)
- SUBSEQUENT OFFENSES: Confiscated, parent/guardian notified; and device returned only to parent/guardian during school hours *The Cambridge Public Schools and its employees, representatives and agents do not offer any express or implied warranties for the protection of property confiscated for violation of school rules and are not responsible for, and shall not be held responsible for damages or losses sustained as a result of property being confiscated for violation of school rules.

http://crls.cpsd.us/UserFiles/Servers/Server_3045299/File/students/2015-2016_CRLS_Student_Handbook.pdf

Appendix I

Full Circle Next Wave (Somerville) Cell Phone Policy

(Note this is an updated policy that was updated after the research was conducted. The previous policy described by students, teachers and administrators alike allowed the students to use their phones during lunch and their break period. As detailed in the paper, this policy was described as an attempt to meet the students "half way". The policy below appears to have removed the waiver on mobile phone use during these specified times. I will follow up to understand why this change was made).

Cellular Phones: Cellular phones are allowed in school only if you turn it off (Not on vibrate), keep it out of sight, and don't use it while school is in session. This means your phone cannot be on from 8:00 AM until 2:30 PM. If you forget to turn it off, you will have to turn your phone into your counselor for the rest of the day. If you use your phone in school, you will be sent to the process room for the rest of the day. If someone needs to get in touch with you during the school day they can call the school. Students who repeatedly break the cell phone rule will have further consequences, including losing the right to bring your phone into school. If your parent/guardian needs to contact you during the school day, they may call the school and a staff person will get you.