

## **MOBILE MEDIA IN TEEN LIFE: INFORMATION, NETWORKS, AND ACCESS<sup>1</sup>**

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## 7. MOBILE MEDIA IN TEEN LIFE: INFORMATION, NETWORKS, AND ACCESS

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### INTRODUCTION

In recent years, mobile phones have become an integral part of teens' social, cultural, and academic lives. Teens are not only at the forefront of adopting new communication technologies (International Telecommunication Union, 2017; Lenhart et al., 2015), but are also pioneers in setting new social norms and practices in the digital world (Jenkins, Ito, & boyd, 2016). Digital media, particularly mobile phones, facilitates access to diverse forms of information while connecting our private lives to a global society (Ling, 2008). This has raised concerns among the general public about the role that mobile phones place in the safety, social interactions, and academic performance, of teens (boyd, 2014; Buckingham & Strandgaard Jensen, 2012; Vickery, 2017). In our exploratory study, we look at the central role of mobile phones in teens' personal networks through the lenses of social capital, youth media, and social affordance scholarship.

Reflecting widespread anxieties and panics surrounding media usage among young people, in 2017, *The New York Times* published an article entitled "Hooked on Our Smartphones," in which the author argues the diminishment of "face-to-face" interactions caused by smartphone usage is eroding our social interactions (Janne E. Brody, 2017). The same year, *Oxford Dictionaries* chose the word "Youthquake" as its "Word of the Year", reflecting the excitement and anxieties surrounding the large-scale societal changes being led by young people with new technologies (Oxford Dictionaries, 2017). Following this trend, many scholars have speculated that digitally-mediated communications, particularly mobile phones, have a limited capacity to facilitate genuine social interactions (e.g. Turkle, 2015; Twenge, 2017) and develop

supportive networks (e.g. McPherson, Smith-Lovin, & Brashears, 2006). There is a general tendency to believe that mobile phones are incapable of supporting complex social interactions and fail to facilitate implicit cues and certain socially salient information.

Given the proliferation of these cultural and scholarly narratives, mobile phones have often become restricted at school and home (Vickery, 2017). These restrictions may result in information inequality, known as “participation gaps” (Craig Watkins, 2012; Jenkins et al., 2016), between haves and have-nots that hinder the critical modes of learning necessary for social, academic, and future career development. Research has demonstrated a positive correlation between home internet use and academic performance of low-income children (Jackson et al., 2007). Other scholars have demonstrated the substantial role of digital media in connecting young individuals to diverse forms of information and social resources (boyd, 2014; Burke, Kraut, & Marlow, 2011; Ellison, Vitak, Gray, & Lampe, 2014; Ito et al., 2008; Lampe, Ellison, & Steinfield, 2008; Valenzuela, Park, & Kee, 2009). The speculations around social interaction and digital media should not be approached with utopian or dystopian lenses, but rather examined in a pragmatic sense. Technologies become available in our day-to-day life through personal, social, and cultural exchanges, allowing “different possibilities to different people in different relationships at different times” (p.172, Baym, 2017).

In this chapter, we advance the current literature by investigating the role that mobile phones play in teens’ access to diverse forms of social practices, supportive networks, and information. This study explores patterns, relationships, and trends related to everyday mobile media practice among teens, using in-depth interview data collected from a diverse sample of high school students (aged 14 to 18) living in a large metropolitan centre. Access to diverse

information sources and social interactions afforded by mobile phones are examined in the light of the young individuals' digital participation and information equality.

### **TEENS MOBILE PHONE USE AND SOCIAL CAPITAL DEVELOPMENT**

For the purpose of this study, the concept of social capital is used to consider the implications of teens' mobile-media practices. While social capital has both micro- and macro-level aspects, this study focuses on the micro-level, specifically, "the resources embedded in social networks accessed and used by actors for actions" (Lin, 2001, p.25). Individuals may engage in "expressive" exchanges, which can help to maintain existing social capital within relationships, or in "instrumental" exchanges, which leverage specific resources or valuable information from those relationships. Expressive exchanges are generally with close friends and family who occupy a similar socio-cultural space as the individuals under study. Research (e.g., Sessions, & Her, 2011; Ling, R., Yttri, & Diduca, 2003) has found that mobile communication has a supportive role in facilitating such returns. Instrumental returns, however, require "greater effort to reach out beyond one's own social circles" to connect with those who possess diverse types of resources (Lin, 2001, p.51). Previous research focusing on traditional mobile-media practices (e.g. voice-calling and SMS-texting) has found that mobile phones "permit a restricted or jaundiced form of social capital by denying a core ingredient: access to 'weaker links' via bridging forms of social interaction" (Wilken, 2009, p.138). Given the increased customizability of smartphones today, we re-examine the role that mobile devices play in maintaining and developing weaker ties.

Scholarship surrounding mobile-media practice has a number of conflicting conclusions

on its impact on our social interactions. While writers such as Sherry Turkle argue that mobile media gives “the illusion of friendship without the demands of intimacy” (2015, p.5), a number of communication and media studies have consistently found that mobile communication can strengthen social intimacy (e.g. Campbell & Kwak, 2012; Gergen, 2008; Habuchi, 2005; Kobayashi & Boase, 2014; R. S. Ling, 2008). In addition, it has been shown that smartphones can help individuals connect with heterogeneous relationships (Kobayashi, Boase, Suzuki, & Suzuki, 2015) and can serve both instrumental and expressive returns (Schrock, 2016).

As instrumental and expressive returns complement each other (Lin, 2001), it is important for teens to be able to develop strategies that help them to leverage these different types of returns. The ability to establish and manage different supportive friendships is significant to students’ academic achievement (Antonio, 2004; Kahu, 2013; Mega, Ronconi, & De Beni, 2014; Roberts, 2009), and their cognitive, emotional, and social development (Eentwistle & Waterston, 1988; Hartup, 1989). Learning opportunities occur in and out of classrooms, between teachers and students, amongst students themselves (Orsmond, Merry, & Callaghan, 2013), and in self-directed settings (Lave & Wenger, 1991). Developing friendships outside of one’s clique is important for teens’ access to information diversity. Such heterogeneous contacts often provide access to more diverse and novel information resources (Granovetter, 1973), such as different volunteer or learning opportunities, which also helps them develop intellectual flexibility and social skills.

Social networking sites (hereafter SNSs) allow teens to connect and manage diverse relationships offline, such as close friends, family, or old classmates. These “social supernets” enable individuals to manage (Ellison et al., 2014) a greater number of weak ties conveniently,

which in turn increases the number of information sources available to them (Donath, 2007). Research has shown a complementary relationship between Facebook use and access to social capital (e.g. Burke et al., 2011; Lampe et al., 2008; Steinfield, Ellison, Lampe, & Vitak, 2012; Valenzuela et al., 2009). As smartphones have become the primary access point for SNSs (Schrock, 2015), particularly for teens (Lenhart et al., 2015), it is conceivable that the accumulation of social capital may also be facilitated through mobile phone based social interactions. This study explores how teens draw on different mobile SNSs to connect with different social ties, and the consequences of this process.

### **SOCIAL INFORMATION PRACTICES AND INVESTMENT IN SOCIAL RELATION**

Access to quality information-resources is dependent on the individual's ability to connect and develop supportive relationships with different social ties and communities with valuable information (Burt, 1992). This requires one to develop a robust communicative and social skillset consisting of an "investment in social relations" (Lin, 2001, p.19). While the way in which social relationships facilitate information flow is relevant, teens have information priorities and practices different from adults because of their stage in life and the social space they occupy. Teens require a large pool of information where they can explore and experience different options to make long-term life decisions, particularly where their education and careers are concerned.

Teens invest and engage in digital media not only for entertainment but also to socialize with friends present in the offline world (boyd, 2014). SNSs thus can "introduce new possibilities for interaction" (boyd, 2010, p.39) allowing individuals to acquire and maintain an awareness of the social dynamics and context of ties within their networks, which in return can

nurture their relationships (Donath, 2007). While SNS-users report a similar number of intimate friends compared with non-users, SNS-users keep in touch with a larger number of network ties (Tufekci, 2008). Selfies or tweets shared by teens on SNS may seem self-indulgent, but they can often play socially strategic roles in a teen's personal network (Twenge, 2017). Studies on interpersonal communication have consistently found the significance of non-verbal interactions that serve to establish, maintain, and manage different social relationships and increase communication capabilities (Malinowski, 1943; Musolf, 2003; Pavlidou, 1994). This type of practice is not exclusively cultural but also social in nature, in that its main purpose is to invest in the relationship and make an instrumental impact by genuinely initiating interactions.

What teens share on SNSs may constitute a kind of social information embedded in everyday interactions that allows them to develop diverse relationships (Vitak & Ellison, 2013), self-representation and community building (Caidi, Beazley & Marquez, 2018). By feeding into teens' knowledge of how others are doing, social information can lower the initial psychological and social barriers to initiate a conversation with diverse friends, particularly when reconnecting with dormant relationships—old contacts. For example, seeing a former classmate's post on Facebook can allow an academically-minded teen to start a conversation about getting difficult homework done efficiently. These practices among teens can thus be read as a tactic to manage, reconnect, and extend their network for instrumental returns.

Although this research is suggestive, more research is needed to understand deeply the role that mobile devices and SNSs play in the exchange of information, and how this in turn may affect the relationships of teens. This paper focuses on this issue by exploring how teens understand their use of this technology and its implications for information exchange and

relationship development.

## **SOCIAL AFFORDANCES, RELATIONSHIP MANAGEMENT, AND INFORMATION ACCESS**

Given the focus on communication technology in this study, we believe it is appropriate to discuss how we frame and conceptualize the use of technology during social interaction. We use a social affordance perspective, which draws our attention to how particular qualities of a technology are effective for facilitating interactions with particular types of social ties. This approach suggests a nondeterministic explanation of technology use. It involves examining the “mutuality of actor intentions and technology capabilities that provide the potential for a particular action” (Majchrzak, Faraj, Kane, & Azad, 2013, p.39). A range of actions are made possible by the mutual interactions between humans with the agency to repurpose, reconstruct, and reappropriate, and the material properties of technologies (Oudshoorn & Pinch, 2003). Different technologies thus *afford* diverse social actions possible through these mutual interactions, allowing us to utilize different media strategically. Having a mobile phone itself does not guarantee access to meaningful resources. However, when used skillfully to communicate with the right types of relationships, mobile phones can be used to leverage meaningful resources. For example, a teen who wakes up sick in the morning might use his mobile phone to contact a friend who is already on her way to school. He could ask this friend to take notes on an upcoming assignment and send those notes to him later that day. In this example, a mobile phone allowed a teen who was motivated to do well in school the opportunity to leverage timely help from a friend. The device alone did not cause this interaction to occur, but without it, this interaction would not have been possible.

The diverse communication media available today have contributed significantly to our capacity to stay connected to our personal networks (Boase, 2008). This broad availability of affordances has allowed individuals to bond, maintain, reconnect, or establish ties with different people (Schrock, 2015). Individuals sometimes use fewer types of communication media with weaker relationships (Haythornthwaite, 2005), use asynchronously exchanged text or photos for a sense of connectedness with strong and mediated relationships (Licoppe, 2004), or deploy rapid communication channels for “co-presence” with relationships outside of the physical boundaries (Ling, 2008). Several studies on mobile media have found that the media effectively afford a wide range of social interactions through forms of “microcoordination” (Ling & Lai, 2016), perpetual contact and pervasive communities (Hampton, 2016), “near-synchronous” interactions (Rettie, 2009), the ‘constantly-on’ connection (Katz & Aakhus, 2002), and locative social networking (Farman, 2012).

An affordance-based approach accounts for how different properties and qualities of mobile media may influence or shape their use and adoption, without illustrating the use of the media in a technologically deterministic way. Teens require to develop digital literacy skills and social tactics to explore, repurpose, and reappropriate a variety of media in the complex communication systems and personal networks of the present day. This paper examines how teens draw on different digital media available on their mobile phones to stay connected and acquire resources.

## **RESEARCH QUESTION**

This study expands on the current literature by highlighting the significance of social networks as channels to exchange valuable information resources among teens, and the role of diverse media

available on mobile phones in facilitating these interactions. In this exploratory study we seek to address the following three research questions.

1. How do teens use mobile phones in their everyday *information* practices?

With this first question, we explore teens' media selection strategies and their implications for the types of information that they seek, use, and share. In doing so, we address issues raised in our review of prior work regarding the value and types of information that teens exchange, and how mobile media may permit or "afford" information access.

2. How do teens draw on different types of mobile media to connect with different types of *relationships*?

Our second question focuses on the relational aspects of personal networks and the influence they have on the choice of communication media. We look at the different styles, manners, and tools that teens use to connect and manage different relationships to understand: (a) how different social relationships influence the process of media selection, and, (b) how teens describe their mobile-media strategies when managing different relationships.

3. How does *access* to Wi-Fi and mobile data influence the types of mobile media that students use?

With this third question, we consider how unequal access to Wi-Fi could influence the relationships and exchanges that we explore in the first two questions.

## **METHOD**

We draw on 81 in-depth, semi-structured interviews conducted in 2016 summer with diverse set of high school students living in the Greater Toronto Area. Respondents were between the ages of 15 and 19 years old. 52 percent of the respondents were males, and 48 percent were females.

Although we did not ask respondents directly about their family incomes or ethnic backgrounds, we recruited respondents from a range of high- and low-income neighborhoods, and respondents often referenced a variety of cultural affiliations during the interviews. The interviews were generally 20 to 35 minutes long and held one-on-one in quiet public spaces, such as libraries and community centres. The majority of the interviews occurred in community centres where administrators provided permission to recruit teens. Some of the recruitment also occurred through word of mouth, where teens who knew a participant or had seen the recruiting advertisement contacted the interviewers directly.

We manually transcribed the interviews to understand more nuanced information, and we then iteratively developed and applied codes as we immersed ourselves in the reading and rereading of these interviews. In this way, the codes emerged from the data, and allowed us to identify certain themes across multiple interviews. The emergence of themes that are shared by this diverse array of respondents then suggests the existence of perspectives and understandings that extend beyond this sample. However, our first priority in our analysis is to ensure that we represent the voices of our respondents, and provide perspectives into their own understandings of how and why they use their mobile devices. When quoting respondents in this paper we use pseudonyms to protect their identities. These pseudonyms correspond to the gender of the respondent, but given the complexity of ethnic heritage among our respondents we do not use them to imply ethnic identity. Through this research we help to open new directions of inquiry for scholars interested in understanding everyday mobile phone use among teens and the significance of such practices for their relationships and information exchange within these relationships.

The semi-structured interviews first started with a series of general questions focused on the various types of communication media that teens use in their daily lives. Interviewers then asked respondents about five specific types of individuals: (1) someone with whom they “really enjoy socializing”; (2) someone with whom they “discuss important matters”; (3) someone who holds “significantly different values and beliefs” from themselves; (4) someone with whom they are “on good terms, but who is not part of their close core group”; and (5) someone who “has provided them with information that helped them accomplish something important.” For each of these individuals, participants were asked a set of follow-up questions regarding how they communicate with these people and other aspects of their relationship. At all points during these interviews, interviewers actively listened to teens and sought to understand the purposes, consequences, and stories behind their mobile media practices.

## **FINDINGS**

In this section, we report on the findings as they address our three research questions.

### **HOW DO TEENS USE MOBILE PHONES FOR THEIR EVERYDAY INFORMATION PRACTICES?**

The different media available on mobile phones have become a central part of teens’ everyday information practices. A clear theme relating to the first question has emerged: teens actively use diverse media available on their mobile phones for specific purposes. Generally, we find that the interactions occurred in these media serve to provide three key information resources: social, academic, and explorative content.

*Purposive media selection: “Different apps for different things”*

During the study, we observed a strong pattern of teens tactically appropriating and using different smartphone applications to access different resources available in their social networks. Many of the participants explicitly describe different purposes associated with various mobile media, as seen in the response of Adam (grade 11) when we asked about his everyday smartphone use.

Pretty much, different apps for different things. I'll use texting for... like quick messaging, see what's up, talk about homework, what's on tests, links, stuff like that. Email, check files and whatnot. For Snapchat, it is like what's going on in school — say if someone's doing a presentation we'll record them or something interesting.

This is particularly notable when teens draw a distinction between in-person communication and smartphone interaction. In-person communication is reported to be phatic in nature, more “random”, and is often influenced by temporal and environmental factors. Dawn (grade 11) explains, “[f]or in-person, it is whatever that comes up. Usually, there are more people around so we talk about different things. Pretty random.”

In-person communication generally consist of less-goal-oriented phatic interactions with “no substance” (Lynne, grade 10), influenced by the temporal, “what's going on in my mind at that time” (Rikki, grade 9), and spatial, “where we are” (Alex, grade 11) factors. In contrast, teens are more strategic and purposeful with their mobile communication, where they feel “in-control” of the flow of interactions. Near-synchronous media – such as messaging applications that facilitate constant and continuous interactions – is used more strategically. Aspen (grade 11) articulated why one may choose text messaging for more specific communication.

Unlike talking, I think with text messages, you are looking at the words you are saying, there's a lot more review that goes into it. You can read over something and know that's going to come across weird, instead of just blurting it out.

The different modes of communication afforded by mobile devices give teens control over the flow of communication and their own impressions by strategically crafting and editing their messages, thereby supporting more convenient ways to access diverse resources available in the networks. Teens actively use diverse media for specific purposes. In the following section, we discuss the general types of information that are accessed, used, and shared by teens.

*Three types of information resources leveraged through mobile communication*

The research reveals three common types of information resources exchanged through mobile communication among teens. While each resource carries distinctive information, they often intersect and feed into each other. The most common types of information exchanged through mobile communication respondents mentioned in the interviews are:

- (1) *social information* that allows teens “to catch up with everyone, what they’ve been up to” (Caidi, grade 12, regarding Facebook);
- (2) *academic resources* including homework, higher education, “what I missed” (Lae, grade, 11) from classes, and updates and reminders about school work; and
- (3) a broader collection of *explorative contents* related to their own interests, new ideas, cultural knowledge, and “different perspectives and opinions about issues [that] help me understanding where people are coming from.” (Tin, grade 9)

These three types of information exchange often feed into each other. For example, many teens describe the patterns in which social information gained from SNS apps feed in to genuinely

initiated a conversation for academic resources, particularly to connect with newly met ties. Like many, Pam (grade 12) acquires information about her new classmate whom she describes her closeness to be “not that close yet.” This information then becomes the icebreaker, “getting to know each other” better, for longer conversations about school lives.

**Interviewer:** What do you see on Snapchat?

**Pam:** Something like the vacation they went on [sic]. Something cool. That kind of stuff.

**Interviewer:** Okay, so you text them?

**Pam:** Usually Facebook message.

**Interviewer:** What do you message about?

**Pam:** Small talks. Talk about her vacation, [asking] how was it, but it’s usually school stuff, so homework, like things the teacher said in class. Things I don’t understand.

Students often experience knowledge gaps (“what I missed”) at school and the social information is particularly useful in facilitating access to different classmates or acquaintances, to exchange and acquire different knowledge and resources to address these gaps. Jeff (grade 11), for example, reports that it is appropriate to use mobile media to connect with his acquaintance to get instrumental resources. He says: “If I’m [Facebook] messaging on my phone, it’s probably because I have a picture or something. I’ll poke him first, comment on his posts or send him memes. It’s mostly about school if he knows how to do something, if he has pictures, links, files... videos, or he has questions.”

The broad connectivity of smartphones facilitates access to diverse information sources around the world. This allows teens to develop diverse perspectives and ideas that are not normally available in their immediate social world.

**Joons** (grade 12): I get news from different people I know on Twitter, Instagram and whatnot. They have links to CBC, CTV, CNN... et cetera. Like, discussions like what people have to say. Recently gun shooting... Since I'm not American I'm not too familiar with their amendments and whatnot. Gun laws, in specific, there's that second amendment with a lot of people who like having guns. They [the gun-rights supporters] cite that. Yeah, I guess to put it in a summary would be to educate myself on... like, the ongoing social events and then... new theories like... the LGBT, or LGBTQ and their rights and stuff like that. Well... a non-casual way of course exploring new ideas and new opinions they help you just formulate your own and involve yourself in some critical thinking.

Joons' mobile media practices are central to his knowledge and understanding of the world outside of his physical and social setting. Engagement with diverse social networks fosters his own "critical thinking" on different social issues. This media practice contributes to expanding his intellectual flexibility and critical thinking outside of the classroom environment.

### **HOW DO TEENS DRAW ON DIFFERENT TYPES OF COMMUNICATION MEDIA TO CONNECT WITH DIFFERENT TYPES OF *RELATIONSHIPS*?**

When choosing communication media, teens consider various factors such as relational closeness, the norms and culture of the community, authority, and other individual preferences.

The most common themes regarding their reasoning are in regards to relational factors and social obligations with the contacting individuals.

*Media selection and relational factors*

Media selection is not solely based on the content or purpose of the communication, and is rather dependent upon the nature of the relationship, such as the respondent's relational closeness to their tie or the norms of their community. A strong pattern of teens adopting and purposing diverse media to connect with different relationships has emerged in the study. Daniel (grade 11), for example, "prefer[s] calling over texting" with his "close friend" because, "[t]exting is just kind of... you don't hear the sincerity inside their voice, and what they want to say." Meanwhile, he states that text-based media (e.g. email, texting or WhatsApp) are "more appropriate" communication methods for weaker ties with access to instrumental resources. Marc (grade 10) chooses WhatsApp and texting with his mentor from a summer camp to "[t]alk about school, what's needed in school to keep it steady average, and what's needed to get a good scholarship and stuff, because that's what our camp friends use to communicate."

Bryce (grade 12) even describes using synchronous media with weaker ties as "stressful." He says, "I think I would be skeptical of calling—always seems like a commitment to me. I don't know, it is just kind of stressful, I can just send a text or quick [Facebook] message." Most teens find it easier to manage their impressions when texting, as opposed to calling or using other forms of synchronous media. Tin (grade 11), articulates why one may choose text messaging over voice calling: "I think conversations carry out really differently in real life or calling versus... in terms of text messaging just because of the nature of text messaging like being concise and typing and stuff, or like I guess typing isn't difficult it is just more effort than just saying exactly what I want to hear."

Media with calling functions are mostly used for emotionally sensitive interactions requiring clarity and precision, especially if the information being conveyed has an emotional or

affective dimension. For example, Pam (grade 12) reports that she chooses to voice or video call because, “Texting is very, what's the word... miscommunication sometimes, like you could be saying one thing, but to them it sounds like something else. So I think when you call them it's just like they're hearing your words, so it makes a little bit more sense.”

*Authority and perceived appropriateness*

One of the interesting relational factors driving teens’ media selection is the perceived obligations when communicating with their authority figures in their lives, such as parents and teachers. Teens feel they are “obligated to use more traditional calling and texting” with adults (Uno, grade 11). Elwood (grade 12) describes the barriers to connecting with his teachers on social media. Even though Elwood is aware that at least one of his teachers is active on Facebook and Instagram, he would not connect with his teachers on those forms of media because “it just seems kind of weird and, usually, teachers don't... like to... be on.” Teens then develop a perception of SNSs to be “not good enough and would not use them for official stuff” (Sunny, grade 11).

Many teens find some media just feel socially “more appropriate” to connect with people with authority. Matt (grade 12), for instance, uses text messaging with his “girlfriend’s mom” for more explicit and relationally “appropriate” communication. He chooses text messaging with this person, because “it’s more appropriate.” He follows, “[o]ccasionally, I usually just like make plans, if I'm meeting with my girlfriend—let her know where we are, what we are doing.” Media selection is influenced by the contacted individual’s position in the teen’s life. Iman (grade 10), whose most frequently used communication medium is social media messaging, particularly with her friends, said, “I only call my mom. Yeah, my mom is a big fan of calling, not so much with

social media—too complicated.” Iman then reports that she uses calling when connecting with “other adults like distant family and tutor” as she believes that adults often find SNSs inconvenient and “meaningless.”

### **HOW DOES ACCESS TO WI-FI AND MOBILE DATA INFLUENCE THE TYPES OF COMMUNICATION MEDIA THAT STUDENTS USE?**

Although our interview does not include questions regarding internet access, many teens voluntarily mention restrictions on wireless connectivity and their ability to connect or manage communication with different social relationships. 56 out of our 81 respondents mention connectivity restrictions, such as Wi-Fi availability at school or a data plan.

For most of the teens, mobile media, particularly Facebook, serves as a kind of contemporary rolodex from which one may connect, ‘unfriend’, and reconnect with different people for different purposes. Scott (grade 9) says that “nowadays you have phones so you can just open the app and its pretty much everything.” In the beginning of our interview, Scott confidently reports that the data connection is essential to his social lives and everyday information practices. He “usually [uses] Facebook and Messenger [to connect with people]. The apps that you have to download afterwards.” This important everyday information and communication system, however, can become obsolete without internet connections. We find three striking themes regarding the implications of wireless access in our interviews.

#### *Awareness of wireless connection and media choice*

Despite the wide smartphone penetration among teens today, many of them do not have direct access to digital media due to limited wireless connections which constrains their everyday social and information practices. Teens are not always as connected as the popular assumption

that they are “the Super-Connected Teens” (Twenge, 2017) would suggest. One intriguing finding was that most teens we interviewed are aware of the wireless connection constraints that their friends have when we asked them about the purpose of SMS-texting.

**Ria** (grade 12): If I can’t contact them on Messenger, mostly because like if they don’t have Wi-Fi or something.

**Peter** (grade 9): If I’m absolutely sure that they have the internet, then I’ll use social media.

**Lynn** (grade 12): Text is based on if I don’t have internet service or if they’re out of the house and they don’t have internet service and usually messaging is when we’re on Wi-Fi. I just wait.

As a result, teens choose to use less convenient media, with a limited capacity in delivering multimedia contents, when communicating with those without connections. Chad (grade 10) says, “It’s really not convenient to contact him sometimes but I just text, no pictures or gifs.” Those without data plans develop strategies to work around the restriction but often they have to wait until the media become available. Galen (grade 12) says, “I [Facebook] message them primarily because it’s more convenient than texting. Then I text them if I don’t have my laptop or I don’t have Wi-Fi and I basically never call them unless I need to know where they are immediately.”

### *Isolation, disconnection, and inequality*

Access differences among teens show consequences for unequal development of social networks with broader information resources. As Galen reports, teens often stay disconnected from their

social networks and information landscape until they get the internet connections.

Communication with weak ties, such as acquaintances and newly met friends, is often hindered when weak ties lack a data plan or have inconsistent wi-fi connectivity. Teens repeatedly describe their contacts without data plans or wi-fi access as “invisible” or avoided. As weak ties often provide diverse information, the disconnection can have significant consequences for teens’ access to valuable information and opportunity to expand their knowledge and develop important social skills to manage different relationships. Amy (grade 9) described her communication with a friend with no data access in the following terms: “If she doesn’t have Wi-Fi then I’ll just wait until I see her. She becomes... well... invisible.”

Like Amy, Jeannie (grade 12) also finds it difficult to contact a classmate, even though this contact often provides her information that allowed her to accomplish “important” school-related tasks including preparing university applications. She expresses the awkwardness in texting him instead of contacting him through Facebook: “Hmm... [pause] I don’t text this person. We would have to call for um... any urgent things where I need something or he needs something and we ...[usually] aren’t sure if the other person has the Internet. We would wait until we go home.” Cindy (grade 12) also explains how her connection with an old classmate who used to talk about “important school related stuff” with has fallen out with the limitation of wireless access. She says, “[w]e don’t usually talk to each other unless she’s at home [and has access to internet]. She has phones but I don’t think she has data plan. I usually wait... But we have different schedules so we don’t really talk much.”

In addition to physical wireless connections, institutions such as the prevailing rules and customs at school or at home also largely contribute to limited network connectivity for teens.

Schools particularly had different rules about mobile phone use and this had an impact on their social networks. Hana (grade 10) reports that she no longer communicates with her old classmate, who she used to help by sharing school work and career information. She says her communication stopped “since she moved to another school... with no phone... Because I know that she is busy ...that... like she doesn’t have time for her phone or whatever...” Kyum (grade 12) also mentions that, “[t]exting is usually if we are in school, because the Wi-Fi isn’t great at school. Calling would only be if I really need to find her.” He follows, “[a] lot of my friends have parents who don’t allow them to use the internet...”

## **DISCUSSION**

In this study, we explore the relationship between teens’ mobile phone use and its consequences for information exchange and relational development. In our first research question we ask how teens utilize mobile media to access different information embedded in their personal networks. Drawing on Lin’s (2001) approach to social capital, we identify teens’ purposive media practices driven by their needs to access different types of resources — social information, academic information, and a broader collection of explorative information. The broadcasting affordance of SNS enabled teens to obtain the social information of diverse relationships. This information allowed teens to “catch up” with different acquaintances. As earlier studies on education have found interaction with friends had an important role in bridging knowledge gaps outside of the classroom (Senior & Howard, 2014; Wenger, 2000). Teens find mobile messaging a convenient and appropriate way to access academic resources. In accordance with previous research (Watkins, 2009; Ito et al., 2010; Jenkins, 2006), teens’ mobile media practice provided opportunities for exploring different ideas, allowing them to involve themselves with different

issues and develop their own critical thinking. These findings suggest a more complicated picture of how teens spend their time online than the one offered by research emphasizing their time spent on unproductive entertainment activities (e.g. Twenge, 2017, p.65). Through accessing and exploring different information resources available outside of teens' immediate social circles, teens show a strong understanding of mobile communication strategies, such as media selection, and tactics to reconnect with certain ties.

Our second question explores the ways in which teens draw on different types of media to interact with people in their network who occupy different degrees of relational closeness, resources, and authority in their lives. Considered in conjunction with previous research on the use of SNSs in relationship management for social capital (Ellison et al., 2014), our findings provide insight into the way in which teens strategically purpose different media available on smartphones to manage different ties. Teens often adopt and develop different communication tactics based on the cultural domain, relational closeness, and structural positions of their various social ties.

These findings are contrary to concerns that mobile media are limited in supporting the development of meaningful personal networks. Mobile communication does not supplant in-person communication and schools still served as an important space in which most of our respondents' relationships are established. Rather, mobile media have a supportive role in enhancing sociability with strong and weak ties, from best friends to "not-so-close" contacts that provide diverse perspectives and information. This is complementary to the previous studies that have examined the role of SNSs (Hampton, 2016; Ellison, Vitak, Gray, & Lape, 2014; Ellison et al., 2010; Ellison et al., 2011; Burke et al., 2011; Burke et al., 2010; Hampton et al., 2011) and

mobile phones (Igarashi, Motoyoshi, Takai, & Yoshida, 2008; Kobayashi et al., 2015; Andrew R. Schrock, 2016) in broadening people's social networks and affording access to instrumental resources.

In regards to the last question about the influence that institutional factors have on teens' access to personal networks, we identify a direct linkage between wireless connectivity and school and the teen's ability to interact with ties in their network. Our results show that restriction on teens' mobile media is found to have two implications. First, our findings show that most teens are aware when their contacts are disconnected, and they sometimes choose different media (such as SMS-messaging) to circumvent this disconnection. However, they often discontinue interacting with weaker ties who lack consistent internet connections on their mobile devices. Given that diverse relational development is critical for accessing new information and ideas within personal networks, these results imply that hindering mobile internet connections can have a significant consequences for accessing new information and ideas. Secondly, such restriction can hinder valuable digital literacy development necessary for social interaction (boyd, 2014), exploring and outside-of-classroom learning (Ito et al, 2010), collaborative education (Ally, 2009), and intellectual flexibility that better prepare teens after graduation.

Teens' technological skills are dependent on the quality of their access. The popular assumption that young generations are technologically savvy and have necessary skills to seek, use, and share valuable information online is a misconception and they are more likely to be "digital naives" than natives (Hargittai, 2010). Indeed, as the analyses presented in this study suggest, media use differs among different teens based on their social, institutional, and technological constraints. As mobile media can provide meaningful engagements such as access

to homework information or social support, teens with limited access to these means are likely constrained in varying ways, thereby creating inequality among haves and have-nots.

**CONCLUSION: THE IMPLICATIONS OF TEENS UNEQUAL MOBILE INTERNET ACCESS FOR RELATIONAL DEVELOPMENT AND ACCESS TO RESOURCES**

This study contributes to our understanding of how teens use their mobile phones to address everyday information and communication needs by: (1) identifying the purposive media practices of teens driven by their need to access different types of resources—social information, academic resources, and a broader collection of explorative content—embedded in their personal networks, (2) exploring the ways in which teens strategically draw on different types of media to interact with people in their network who occupy different degrees of relational closeness, resources, and authority in their lives, and, (3) identifying the significant role that wireless connections and school institutions play in facilitating access to these media. This study suggests limiting teens' media use on their mobile phones can create unequal opportunities to explore and access resources beyond their immediate environment. Limiting teens' mobile internet connections can limit access to important resources such as information regarding homework or social support. Rather than restricting teens' access to mobile media, policymakers, schools, and parents should encourage more meaningful engagement and exploration with the media that empowers individual agency of teenagers during their coming-of-age.

There are several findings in this study that bear further examination. Firstly, we have observed a strong association between resources and the characteristics of relationships influencing teens' media selection. We have suggested that teens purposefully choose different platforms based on their information needs, relational closeness, communities they belong to,

and personal preferences regarding those that they contact. These factors require further examination in terms how they vary by cultural, temporal (e.g. transition to college), spatial (e.g. cross-border migration), and socioeconomic groups. Secondly, our research shows the positive role of mobile phones in teens' everyday lives. This is likely because the teens we interviewed already have varying degree of supportive networks established in their offline world. Further examination of mobile phone practices among teens with limited or marginal networks is required to better understand the significance of mobile phones in facilitating access to meaningful information practices.

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