

EXPLORING IMPACTS OF ADOLESCENT CYBER SPILLOVER IN  
THE SCHOOL CONTEXT: INSIGHTS FROM ADOLESCENTS,  
ADMINISTRATORS, AND PARENTS

by

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digital citizenship education into school curricula, and ongoing communication between parents and school staff. Participants also discussed the challenges associated with implementation, such as resource constraints and time limitations. Overall, this study provides valuable insights into the complex dynamics of cyber spillover in the school context and offers recommendations for planning interventions and conducting future research. By fostering a supportive and inclusive environment, schools can mitigate the negative effects of cyber spillover and promote the well-being of adolescents in the digital age.

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## Introduction

The U.S. Surgeon General has urged action in ensuring the health and safety of social media environments, particularly in light of the ongoing national youth mental health crisis (ASH, 2023). Social media usage has implications for mental health outcomes in adolescence, a time of significant development (Odgers & Allen et al., 2022). Emerging research and anecdotal evidence suggest that negative online experiences can influence daily face-to-face interactions in educational settings during early adolescence (Su et al., 2021). However, more investigation is needed regarding the unique contributions of early adolescents' technology use to school climate and in-person social connectedness (ASH, 2023).

Extensive evidence suggests that technology use, including social media, online communication, and gaming, are associated with the mental health of adolescents (Barry & Sidoti et al., 2017; Office of The Surgeon General, 2021; Twenge et al. 2022; Uhls & Ellison et al. 2017) and with school interactions and learning (Amex & Baert, 2020; Su et al., 2021). Furthermore, research has suggested that heavy social media use is negatively associated with school connectedness and academic performance (Sampasa-Kanyinga, 2019). Nonetheless, the current scientific literature lacks a thorough exploration of online interactions and their potential effects on in-person interactions among youth in the school context. Addressing this gap in understanding can potentially mitigate harm, inform prevention, and create tangible ways to assist youth, parents, and educators in promoting healthy technology use. To bridge this gap, the present study adopts a qualitative approach, focused on interviews with parents, adolescents, and educators. Through interviews with these relevant parties, this research seeks to shed light on the dynamics of this phenomenon in the school context and contribute to a deeper understanding of its implications for adolescent well-being.

## Literature Review

### Teen Technology Use

Despite the commonly set minimum age of 13 by U.S. social media platforms, about 40% of children aged 8 to 12 are active on these platforms (Rideout et al., 2022). Furthermore, 97% of teenagers use the internet daily (Vogels et al., 2022). While researchers, caregivers, and healthcare providers have voiced concerns, there remains a significant gap in comprehensive research regarding the impact of technology, and social media more specifically, on the mental health of young people (Office of the Surgeon General, 2021; American Psychological Association, 2023).

Current research reveals both positive and negative consequences of technology use on the well-being of children and adolescents (U.S. Surgeon General's Advisory, 2023). The ability of youth to form and maintain friendships online and develop social connections is among the positive effects of social media use (Anderson & Jiang, 2018). The advantages of online social support from peers may be especially important for youth who are marginalized, including racial, ethnic, and sexual and gender minorities (Charmaraman et al., 2022; U.S. Surgeon General's Advisory, 2023).

However, excessive social media use has been linked with immediate and long-term poor mental health outcomes (Riehm et al., 2019; Braghieri et al., 2022). Damodar et al. (2021) conducted an extensive literature review over the previous ten years of relevant research, that revealed that a majority of the articles found a positive association between social media use and depression (84.6%) and anxiety (69.2%). Factors contributing to these mental health issues included negative social perspectives, diminished self-esteem, cyberbullying, and sleep disturbances. Similarly, Azem et al. (2023) found that using social networking for over an hour



on school days was linked to higher rates of mental health problems, particularly among females, and this high social networking use predicted future depressive symptoms in adolescents.

Furthermore, in a study on video gaming, researchers revealed a moderate correlation between potentially problematic video game use and adverse psychological outcomes, encompassing general psychological symptoms, maladaptive coping strategies, negative affectivity, low self-esteem, a preference for solitude, and poor school performance (Von der Heiden et al., 2019).

To effectively educate youth about online safety and mitigate these adverse effects, Su et al. (2021) identified the concept of cyber spillover, which refers to the way online interactions overflow and influence in-person interactions in school and home settings. Past research has found that the ease with which rumors and misinformation can be disseminated online can amplify the influence of rumors and drama (Li et al., 2023). Furthermore, Su et al. identified the need to effectively educate youth about online safety and mitigate the adverse effects of cyber spillover. The current study will inform ways parents, educators, and other relevant stakeholders can provide better guidance to early adolescents as they begin to navigate technology.

### **Ecologies of Teen Technology Use**

Ecological systems theory (Bronfenbrenner, 1977) provides a foundational framework for comprehending the influence of various environmental factors on individuals. This model comprises four key systems: the microsystem, mesosystem, exosystem, and macrosystem. Within the ecological systems theory model, the microsystem, which encompasses immediate environmental interactions (e.g. family and peers), plays a significant role in adolescent development. Whether the digital environment exerts positive or negative effects is often contingent on the immediate context of family, school, and peer support, in shaping adolescents' development of both in-person and online identities (Cross, 2015).

Johnson and Puplampu (2008) introduced the ecological techno-subsystem as a dimension of the microsystem to better understand the interplay between technology and a child's immediate environment. Favorable outcomes included a positive correlation between increased internet use and improved reading scores, cognitive development, and academic performance, which has also been found in subsequent studies (Benvenuti, 2023; Haddock, 2022). However, excessive online gaming and social media use have been associated with distractibility in adolescence and excessive online gaming has also been associated with overstimulation and aggression in children (Moisala et al., 2016; Orben, 2019). The role of technology within an adolescent's microsystem is so influential that researchers have introduced the concept of media acting as a "super peer." This suggests that media can exert an influence similar to, but more powerful than influence caused by a peer (Andrews 2020; Elmore et al., 2017; Strasburger, 2007, 2012).

The broader community an individual is a part of, known as the exosystem, can also influence how adolescents use technology. In a study involving 571 Italian teenagers, researchers looked at how moral disengagement mediates the relationship between school climate and cyberbullying. They discovered that a positive school environment was linked to lower cyberbullying levels, and this link was influenced by moral disengagement. This indicates that interventions should focus on building collaborative, ethical environments and school climate (Bartolo, 2019). The challenges caused by the influence of technology continue to impact the lives of adolescents today, underscoring the need to comprehend how technology shapes various aspects of the microsystem, spanning from parental influence to peer dynamics to educational settings (U.S. Surgeon General's Advisory, 2023).

## Cyber Spillover

### *Interactions at School*

**Associations with Aggression.** The Centers for Disease Control and Prevention (CDC) defines youth violence as intentional physical force by young individuals to harm or threaten others (Centers for Disease Control and Prevention, 2018). The World Health Organization (WHO) has identified youth violence as a global public health concern, encompassing a range of acts from bullying to severe assault and homicide, demonstrating the need to reduce school violence. Researchers Sobkin & Fedotova (2021) have found a correlation between experiencing bullying and becoming both victims and aggressors online. Furthermore, researchers Waasdrop and Bradshaw (2015) have found overlap between cyberbullying and in person bullying.

A study of over 40,000 Russian students addressed the aggressive behavior of secondary school students on social media, particularly focusing on cyberbullying. This research examines different aspects of teenagers' social media use, including activity, intensity, motives, and self-presentation, along with factors such as gender, age, and social psychological influences. Aggressive behavior was revealed to be very prevalent, and social media usage patterns varied among adolescents of different social statuses. The study demonstrated an increase in aggressive interactions with strangers as adolescents age (Sobkin & Fedotova, 2021).

Beyond interpersonal aggression, social media is also linked with school shootings and self-harm, as evidenced by a study conducted by Dowdell et al. (2022). The participants of this study consist of 25 male school shooters aged 12-26, who were involved in shootings at educational institutions between 2013 and 2019. The findings highlight the prevalence of social media usage among school shooters, revealing that approximately 88% of school shooters possess social media accounts, and 76% of them post threatening content involving firearms.

Another form of aggression linked to social media is highlighted in a study by Swedo et al. (2021) which explores the relationship between social media exposure to suicide clusters and suicidal behaviors among adolescents during such clusters. With a focus on understanding how social media can amplify suicide contagion, the study involves over 9,700 Ohio students. The research demonstrated that exposure to suicide cluster-related content on social media correlates with higher odds of suicidal ideation and attempts during such clusters. Because technology use has been linked to aggression among adolescents, research is needed to understand ways to mitigate harm and prevent such aggression from occurring.

**Impacts on Socialization with Peers.** One commonly cited positive impact of technology on adolescents is enriching friendships (Lenhart, 2015; Rousseau, 2019). Wright and Wachs (2023) investigated the impact of technology use for friendship maintenance on the relationship between self-isolation during the COVID-19 pandemic and friendship quality among seventh and eighth-grade adolescents. The results indicated that utilizing technology to maintain connections enhances the quality of friendships over time. Furthermore, technology use for connection may have lessened the negative impact of self-isolation on friendship quality.

On the other hand, in a thematic analysis conducted on a group of 34 adolescents using technology to interact with peers, researchers identified various negative interaction types, including instances of name-calling and physical aggression, and discovered that adolescents exhibited distinct behavior patterns in offline and online environments. Notably, adolescents frequently downplayed acts of aggression, particularly in online interactions where the absence of physical cues made it challenging to distinguish between jest and harm. Conflict resolution was more commonly observed in offline scenarios, with the involvement of adults, whereas

online incidents were less likely to engage adults. Surprisingly, many adolescents, despite having access to digital tools, expressed a preference for offline interactions to steer away from potential dramatic situations (Pabian, 2018).

Additionally, educators' observations of adolescents' socialization through technology are a vital perspective. A 2021 study by Ventouris et al. of interviews with eight teachers with various levels of experience found three themes: technology in education, lack of access to technology, and changes in children and young people's behavior. The teachers noted the dynamic between technology use and socialization among children and young people, highlighting both the potential displacement of in-person interactions and the potential for deeper peer relationships online. Concerns were raised about youth's increased tech engagement affecting social skills, with an emphasis on the importance of in-person interactions for nurturing communication skills. The interviews also highlighted that social withdrawal among adolescents could potentially be exacerbated by digital use, creating further socioemotional risk. To address the complex issue of adolescents' technology use and its impact on interactions with peers, this study will combine adolescents' perspectives as well as their parents' and educators' perspectives.

### ***School Policies and School Climate***

A 2015 study by Mardianto et al. highlights the importance of fostering a positive school climate to address both traditional aggression and cyber aggression, especially within the realm of social media. It emphasizes that schools serve as crucial environments for shaping students' behaviors and personalities, aligning with community norms. By promoting respectful interactions and supportive atmospheres, positive school climates can potentially increase

student engagement and reduce aggression. Strategies such as peer support programs, proactive policies, and digital citizenship education are crucial for creating a safe and supportive environment conducive to positive social interactions and emotional development.

Another vital aspect of school climate is the implementation of school policies. Research indicates that implementing comprehensive school policies aimed at promoting health and well-being may lead to: a decrease in total screen time; enhancement of mental well-being, physical activity, sleep quality, and academic achievement; and a decrease in disruptive behavior within the classroom (Dix et al., 2012; Katapally & Laxer 2018; Kvardova, 2019). This indicates that school policies aimed toward the reduction of technology use may positively impact adolescents' well-being.

School staff play a crucial role in maintaining a school climate that accounts for cyber spillover impacts. A 2020 study by Su et al. addressed the role that school counselors play in mitigating cyberbullying. School-home communication was a vital aspect of addressing cyberbullying, but some parents lack awareness of cyberbullying and school policies. Building relationships with parents was established as key, requiring understanding and patience from counselors. Researchers found blurred boundaries between home and school exacerbate cyberbullying issues, and unclear policies hinder intervention. Support for families and counselors is crucial, including education on cyberbullying and internet safety. Ultimately, strong school-family collaborations create an environment conducive to the holistic development and safety of children.

Parent-school communication is also impacted by technology which can in turn influence adolescents. Research has suggested that integrating technology into school-parent communication channels can offer opportunities to support parental engagement and bridge the

gap between home and school. However, the adoption of technology in this context requires careful consideration of factors such as training, cost implications, and sociocultural values surrounding communication and learning (Goodall, 2016).

## **The Current Study**

While there is evidence of both positive and negative impacts of technology on adolescents, there's a lack of comprehensive research on how online interactions spill over into in-person interaction in the school context. Further, after the COVID-19 pandemic incidence of cyberbullying and bullying has increased (Sorrentino et al., 2023). Hearing perspectives from parents, educators, and adolescents themselves is crucial to gaining a holistic understanding of these dynamics, particularly in the wake of the COVID-19 pandemic.

This study sought to address the gaps identified in the literature through qualitative interviews with youth, parents, and educators. Guided by ecological systems theory, we focused on interactions in the microsystem, emphasizing the importance of peer, teacher, and parental support in adolescent development.

This research aims to explore the question: What are the impacts of cyber spillover in the school context as perceived by adolescents, parents, and administrators? By delving into the concept of cyber spillover, this research aims to provide insights into how to support relevant in navigating the impacts that the digital world has on day-to-day life.



## **Methods**

### **Participants**

Researchers conducted interviews with community members (e.g., 8 educators, 8 parents, 8 youth) in two local school districts in the spring of 2023 to assess needs and identify questions for a future quantitative study (N= 24).

The research sample included three sets of participants in three Oregon counties: school administrators and counselors, parents of 10-14-year-old middle school students, and 10-14-year-old middle school students. Parent-child data was not dyadic. This means that to maintain independence, parents and youth from the same family did not participate. Four youths identified as female, four as male. All but one adult identified as female. Adult ages ranged from 33 to 51 years. Participants were Black/African American (n=2), Asian/Pacific Islander (n=2), American Indian/Alaska Native (n=2), Multiracial (n=2), and White (n=16). Two participants identified as Latine/Hispanic.

### **Recruitment and Procedures**

We recruited participants through word of mouth, flyers displayed in schools, and social media advertising (e.g., Facebook posts). We sent out information about the study through school and community partners' listservs. We also asked participants to refer friends and colleagues to the study and share recruitment materials through word of mouth. Recruitment materials were available in English and Spanish. All recruitment materials (emails and flyer) contained a link or QR code to a Qualtrics page describing the study with a sort screener to ensure eligibility criteria were met. The criteria were as follows: all: access to Zoom for interviews; for administrators: Works as a school principal, associate principal, social worker,

school psychologist, school counselor, or related position; for parents: parent of a middle school child; for teens: currently in middle school). After filling out the screening criteria, participants were directed to an online consent or for adolescents, parental consent and assent form.

Participants were incentivized to complete the interview with a \$40 e-gift card.

The research team collaboratively made interview guides for interviews with school administrators, parents, and youth. Interviews were conducted over a video call that lasted about one hour. Topics covered included: disruptions to the school day or face-to-face interactions due to online incidents; training and learning regarding cyberbullying problematic online behaviors; experiences in handling cyber spillover and related incidents within their school or home environments and insights on collaborating with parents and schools to address these issues. Participants were also asked about what other topics they believe researchers should document. Questions were framed in a developmentally appropriate manner for adolescents and structured to be relevant to the particular participant. For example, adolescents were asked, “How much do your parents know about what you experience online?” whereas parents were asked, “What do you think about the amount of time your child spends online? What do they do online?” (table 1). The interviews were video-recorded and transcribed and identifying information was omitted. The research team coded transcripts in DeDoose. A thematic analysis using a quasi-deductive approach was conducted based on coding schema by two independent coders. Inter-rater reliability was established through double coding 20% of the transcripts by four coders. Four coders continuously and consistently met to discuss differences in coding and to come to an agreement, encouraging discussion of various opinions. The research team fostered an egalitarian environment to eliminate power imbalances in decision-making.

Adult participants filled out consents and agreed by signing electronically with their mouse and typing their names. Teen participants were directed to an assent form to also sign electronically. Parents listed by youths in the online assent survey were contacted and prompted to consent. Allowing youth to assent before parental consent removed barriers to participation because youth only had two online interactions to participate in as opposed to three if they did the assent after parental consent.

### **Thematic Analysis**

The guidelines for Thematic Analysis, as described by Braun and Clarke (2012), were employed throughout the analysis. Thematic Analysis is a method for identifying patterns and meaning in a qualitative data set in an organized manner. This involves six key steps in which researchers:

1. Data Familiarization: immerse themselves in the data
2. Initial Coding: label data with pertinent codes
3. Searching for Themes: identify overarching themes emerging from the coded data
4. Reviewing and refining: ensure alignment with the dataset and research question
5. Defining and Naming Themes: give appropriate and specific names to each theme
6. Writing the Report: describe identified themes and relevant quotes are used as evidence to demonstrate the prevalence of these themes (Braun and Clark, 2012).

One of the advantages of thematic analysis is that it can be conducted in many ways depending on the purpose of the research. The three main choices that researchers can make when conducting thematic analysis are the inductive versus deductive approach, an experiential versus critical orientation to data, and an essentialist versus constructionist theoretical

perspective. Depending on which choice researchers make, limits are created regarding what can and cannot be said about the data (Braun and Clarke, 2012).

An inductive approach to data coding and analysis means that codes and themes are derived from the content of the data, whereas when using an inductive approach researchers view the data through a lens of predetermined concepts (Braun and Clarke, 2012). We used a combination of both approaches, a semi-inductive approach. We started with an inductive approach and transitioned into a deductive approach as we coded data and new themes, and codes were brought to light.

Experiential approaches view language as a reflection of internal understanding (Reicher, 2000), meaning that researchers who use this method assume feelings and practices from participant's use of language. In contrast, critical approaches challenge the assumption that language is only of interest as a description of inner states and see it as something that constructs the world (Braun and Clarke, 2012). We utilized an experiential approach because we were seeking the perceived perspectives of participants under the assumption that their language reflected their inner thoughts and feelings.

An essentialist perspective implies that the conditions of society are inherent and objective, whereas a constructivist perspective assumes that the world is socially constructed (Braun and Clarke, 2012). As researchers, we employed a constructivist lens under the assumption that parents, adolescents, and educators play a role in the relationship between cyber spillover and adolescents' experiences.

Table 1. Cyber Spillover Interview Guide

<b>Interview Guides</b>		
<b>Adolescents</b>	<b>Parents</b>	<b>Administrators</b>
How do teen’s online experiences spill over and affect their in-person lives? For example, how does their online life affect real-life relationships?	How have you observed teen’s online experiences spilling over and affecting their in-person lives? For example, how does their online life affect in-person relationships?	How have you observed students’ online experiences spilling over and affecting their in-person lives? For example, how does their online life affect in-person relationships?
How do you think students’ online experiences affect their school activities?	—	How do you think students’ online experiences affect their in-person activities at school?
In what ways do online activities affect teens’ mental health?	In what ways do online activities affect teens’ mental health?	In what ways do online activities affect students’ mental health?
In what ways do online activities affect teens’ experiences with aggression in person?	In what ways do online activities affect teens’ experiences with aggression in person?	In what ways do online activities affect students’ experiences with aggression in person?
How have you observed things that happen online spilling over to school in general?	How have you observed online interactions spilling over to the school climate?	How have you observed online interactions spilling over to the school climate?  · For example, how do online connections turn into friendships?  · For example, in what ways do students’ online hostility affect safety at school?
What rules does your school have that limits cyber spillover at school?	What policies have you seen work to limit cyber spillover in the school environment?	What policies have you seen work to limit cyber spillover in the school environment?
What are the best ways to get parents involved in addressing cyber problems that affect teens?	What are the best ways to get parents involved in addressing cyber spillover?	What are the best ways to get parents involved in addressing cyber spillover?
How have you seen things that happen online affecting what happens at home?	How have you seen online interactions affecting what happens at home?	—
How much do your parents know about what you experience online?	How much do you know about what your child is experiencing online?	—
What do your parents think about the amount of time you spend online and what you do online?	What do you think about the amount of time your child spends online? What do they do online?	—

<p>What conversations have your parents had with you about how to use technology in a healthy way?</p>	<p>What conversations have you had with your child about how to use technology in a healthy way?</p>	<p>—</p>
	<ul style="list-style-type: none"> <li>· How do you monitor your child's online behavior?</li> <li>· How do you use technology together with your child?</li> </ul>	
<p>What house rules have worked to promote teens' healthy technology use and limit cyber spillover at home?</p>	<p>What house rules have worked to promote healthy technology use and limit cyber spillover at home?</p>	<p>—</p>
<p>What are some ideas you have for parents to coordinate with the school regarding healthy technology use and cyber spillover?</p>	<p>What are the best ways to coordinate with the school regarding healthy technology use and cyber spillover?</p>	<p>What suggestions would you have for parents regarding use of technology?</p>
<p>—</p>	<p>What questions should we be asking teens about in our research about cyber spillover?</p>	<p>What questions should we be asking teens about in our research about cyber spillover?</p>
<p>What questions should we be asking teens about in our research about cyber spillover?</p>	<p>What other questions should we be asking parents about in our research about cyber spillover?</p>	<p>What other questions should we be asking you about in our research about cyber spillover?</p>
<ul style="list-style-type: none"> <li>· What don't adults understand about teen's technology use that they should be aware of?</li> </ul>		
<p>—</p>	<p>What other things would you like to tell us about?</p>	<p>What other things would you like to tell us about?</p>

## Results

To answer the research questions, this thesis focuses primarily on the themes of School Climate, School Policies, Need to Learn Digital Citizenship, and Family Involvement in Schools. Quotes extracted from these four themes provide insight into the challenges posed by cyber spillover in the school environment, the current approaches to addressing these challenges, and potential strategies for more effective intervention.

### School Climate

In this theme, participants suggested that cyber spillover shapes students' experiences and interactions within the school community and sheds light on educational impacts and social dynamics. Between subthemes of aggression, emotional safety violations, impediments to learning, and decreased interaction at school, the participants perceived that online engagement affected dynamics within school spaces.

### *Aggression*

**Spillover from Online to In-person Aggression.** Online interactions were portrayed as an influencing factor on aggression in school settings. Participants described how conflicts originating online “on nights and weekends” often escalate to in-person confrontations in school. One parent articulated, “When the children see each other in person, bullying that happened on the Internet is aired live.” Social media, group chats, video games, and school communication tools were all cited as platforms for aggressive behaviors. Participants described aggression rooted in online interactions manifesting in the form of physical fights, lockdowns due to gun threats, drama and rumors, cyberbullying, and emotional safety violations. An administrator described the impact of online interactions on aggression at school, “I think sometimes people

come to school like really upset, right? Because they have that aggression because they were activated by something online.” Furthermore, many interviewees described a pattern where conflicts online led to plans for physical altercations at school, followed by dramatic escalations and subsequent investigations by the school administration. An administrator reflected on the process of planning fights online saying:

"It seems like a behind-the-scenes thing happening as a preamble to some forms of aggression.... For example, maybe a month or so ago, there was a group of eighth-grade boys, right? Like, ‘Okay, we’re gonna meet in this bathroom, during this period, and everyone meet there.’ Organizing it online, all through their social media. I think this one was via Snapchat. Then all those Snapchats went out, and there was a big crowd in one area of our building. And we were like, ‘That’s weird.’ And of course, a fight broke out. After some investigation, it had been planned for like two days. Everybody knew about it. And it was all right there. We could read everything. We could see a start date and everything."

Many interviewees emphasized that not only can potential physical altercations result in immediate physical harm to students, but the cascading effects of aggression originating from online interactions encompassed a wave of distraction, stress, and conflict. For example, an administrator explained, “They’ll come to school the next day, and somebody will say, ‘Well, she told me, she was going to beat me up online.’” These effects can impact not only those directly involved but also those within the wider school community. Aggression did not always take the form of physical fights. One student recounted instances of derogatory language used online and its subsequent manifestation in face-to-face interactions.

“Well, usually online, people will say some really bad stuff, and then they say it a lot in real actual private school because like I’ve heard it. Teachers at school talk about that. That people just say the R-word. A bunch like. Like there’s a lot of bad environment (sic) that happens at my school.”

Regardless of the origin or specific manifestation of aggression, online interactions appear to amplify and normalize in-person aggressive behaviors.



**Spreading Rumors and Drama.** Spreading rumors and drama was a prominent subcategory under aggression. Some examples that were brought up of rumors and drama were kids attempting to cancel each other, the spread of misinformation that gets blown out of proportion, and the widely spreading of inappropriate pictures of students. A youth articulated, “It's super easy to have a fight on text and just ignore each other that next day.” Another youth discussed the spread of pictures, saying “They save them and then send them to all their friends. Then, their friends send it to their friends, and it just keeps going down the line.” Dissemination of pictures can be harmful depending on their content and the speed of the spread. One administrator described how rumors and drama originating online impacted social interactions at school.

“You take that and amplify it by 160 students on a group chat. And all it takes is the first day of school, someone makes one, or even in the summer... And then the kids start getting to know one another, adding contacts, adding, adding them, I can add you to a group chat if I have your contact—without your consent. So now, ... and ask all these people what they think of you. And then some of them are going to be really nasty, and others are going to come to your defense which creates division within that group alone... You're in your classes. Half those students are sitting somewhere in the room, they're snickering, they're looking at you, they're whispering about you.”

These quotes highlight the connections between online interactions among students and their subsequent effects on in-person interactions at school. The expansive reach of rumors and drama facilitated by technology appears to have a magnifying effect on the overall school climate at times.

### ***Emotional Safety Violations***

Emotional safety violations emerged as a significant subtheme within the theme of School Climate. A youth shared that “If somebody sends a text to someone they don't like, you'll kind of feel sad or angry. And they won't feel safe at school.” One administrator reflected on the

impact of such violations, particularly concerning the large impacts that sexual harassment and cyberbullying can have on the lives of adolescents:

*“The sexual images or videos have really impacted some of our middle school girls because they're often shared without their consent. And then once it's out there, it's out there. And it's super easy on some of these platforms to just make a recording of the recording. And we've had people do like, airdropping of that. And so, in those specific instances that are coming to my mind, those students aren't going to go back to school. They have chosen other pathways.”*

This quote makes it clear that at times, online emotional safety violations can have significant impacts on the in-person lives of adolescents.

### ***Impediments to Learning***

Participants illustrated how technology impedes learning, including the distraction caused by technology use during class, the allocation of class time to address non-school related technology use, and worry resulting from online interactions that disrupt adolescents' focus during the school day. A youth described her observations of technology distracting her peers from learning:

*“I know a lot of people at my school always sneak their phones into class or do games on the computer. I feel like it's probably distracting them from actually learning. It's not very healthy for them to be doing that when they should be learning.”*

This perspective highlights that technology can divert student's attention as a form of entertainment during class time, thus impeding learning. An administrator highlighted that cyber spillover itself can impact learning saying:

*“So, you come to school thinking somebody wants to hit you, you are not going to be thinking about math. You're going to be watching or looking around the room and trying to figure out who's saying what about you and who's coming at you, and they're distracted. They're absolutely distracted, with intimidation, fear, or just simply the loss of a friend. Right? So, like, you have this, you know, people are telling you, online, horrible things.”*

This demonstrates how online interactions can redirect students' attention from learning and foster an atmosphere of intimidation and distraction.

### ***Less Interaction at School***

An impact of increased digital engagement that participants noted is the decline in face-to-face interaction within the school environment. Interviewees discussed how they observed increased isolation and lack of social skills potentially due to technology use replacing face-to-face interaction. A parent observed:

*“I think because they spend so much time on the internet or on their devices, a lot of the climate among students is established online and then you're never going to erase it from the climate that exists in school in person, because it's part of so much of their experience. So, I think that on the one hand, the world that they live with each other on the internet affects the school climate. On the other hand, the fact that students want and are allowed to use their devices during their time at school also affects [the school climate] because while they are resting, they are looking at their screens instead of interacting.”*

This observation underscores the interconnectedness between online interactions and the social dynamics within physical school spaces.

### **School Policies**

Participants detailed active efforts in place to mitigate the effects of cyber spillover on the school climate. Although they noted that no concretely perfect solution exists, participants brought up vital factors to consider.

### ***Consequences for inappropriate online behavior***

**Consequences and Punishment.** Various styles of consequences and punishment were mentioned from taking phones away to restorative justice strategies to more conventional punitive measures. For example, one student said, “If you take a video or post it and then an adult shows it to your principal or your head administrator, you could get kicked out of school or

not be able to do sports and stuff.” Amid the various solutions and associated opinions, one persistent narrative was that consistency mattered. An administrator stated:

*“I think the main thing from what I've heard of other buildings is it has to be consistent. It has to be every single teacher, every single staff member has to be consistent because otherwise, you find out that there's some teachers who don't care or you know, it has to be everybody.”*

Among the diverse methods of consequences and punishment, a theme that was emphasized was the importance of consistency, as highlighted by this administrator's insight into the necessity for uniformity across all staff members and teachers.

**Time loss For Administrators.** It is vital to address that mitigating cyber spillover to improve school climate is time-consuming for administrators. One administrator notes, “[mitigating technology use] is a lot of what I spend my time on.” Another administrator touches on the impacts of the amount of energy that is drained via addressing these issues saying,

*“It takes a ton of energy. And what's happening in our school right now is there's, there's like some sense of desensitization, there's a sense of certain overwhelm. You know, how many times a day does a kid report something to an adult in this building that involves something that happened online or is happening online, and nothing ever gets investigated?”*

These perspectives indicate that solutions to cyber spillover-related concerns need to accommodate the bandwidth of school administration.

**Kids Reporting Online Behavior.** Another commonly discussed aspect of enforcing school policies is the importance and utility of adolescents reporting problematic online behavior. Youth described reporting to an administrator as a solution to online to in-person disputes. For example, a youth explained, “I think it was one of my friends who saw [the threat] and showed the principal and stuff like that, and we went in the lockdown.” An administrator shared about the benefits of anonymous reporting:

*“We’ve seen a lot of positivity with kids who know how to anonymously report concerns. And so, if kids can anonymously report concerns, then that seems to disrupt something that they’re seeing online, because then we’re getting the care to the kids that need it at the right time.”*

This quote demonstrates the effectiveness of kids reporting online behavior anonymously in a timely way. Another administrator shared an example of how kids reporting online behavior can prevent potentially dire consequences.

*“[The image] was digitally altered, like, they had put their head on an image. And they were mortified, and I’m so glad they told someone, because there’s other stories of kids who have died by suicide because they were scared that something like this was going to go out.”*

Kids reporting online behavior was perceived as a key aspect of mitigating cyber spillover so that adults can intervene in serious and high-stakes situations.

### ***Monitoring***

**In school.** Monitoring technology use in school was portrayed as a central component of mitigating negative cyber spillover effects. However, the complications in doing so were also discussed in depth. One administrator stated:

*“Teachers have Securely, [a software] where they can see what all the kids are doing. They can shut things down, and they can block websites, but then teachers are spending most of their time just trying to monitor and avoid inappropriate use. And there’s only so much of that a teacher can do.”*

This perspective demonstrates that time mitigating cyber spillover in schools must be balanced with the priority of educating adolescents. Managing this balance presents challenges for teachers and administrators. One youth shares thoughts on monitoring:

*“Don’t yell at a student or like a student if they’re on their phone texting like a grandparent or texting something about someone about something really serious that happened. Because yeah, happens a lot at our school.”*

This quote emphasizes the complexities of balancing, monitoring, and building relationships and highlights the need to consider youth perspectives when monitoring technology use.

### **Need to learn Digital Citizenship**

Participants advocated for opportunities for students to learn digital citizenship. They articulated the need for instruction considering the developmental stage of adolescents and students' capacity for redirection of mistakes towards positive outcomes. An administrator shared, "I think our first step is to educate kids because a lot of times they don't understand what's at risk when they post things online...I would love it if we could have a system where we're really like, teaching kids how to use it responsibly." Another administrator echoed this sentiment, saying:

*"We're just giving them these phones and, without really teaching them how to use it properly then, like, having a slow transition. So, like, 'Here you go, you have it all.' .... Part of being in middle school is kind of pushing boundaries, finding who you are, like 'Where I can, where I can't push back.' And so, they're doing it also with phones, but it's not regulated as much as, you know, some of the other things."*

Some interviewees talked about how adults might consider building a relationship surrounding technology with adolescents to have more effective conversations about technology use with them. One parent stated:

*"I think that the teachers or the school could try to incorporate online time or device time in a constructive positive way. Also, truth be told, I wouldn't allow students to use their devices during lunch during free time, but that possibly creates a lot of tension with young people. I don't know, because I know that you don't want to create a bad relationship with them either. The idea is to build the positive side."*

Participants emphasized the crucial role of education and guidance in fostering responsible digital citizenship among adolescents, advocating for a thoughtful approach that considers developmental stages and promotes positive interactions with technology.

### **Parent Involvement with Schools**

The involvement of parents with schools plays a central role in mitigating cyber spillover among adolescents. This is highlighted by the salience of the subthemes of parent-school communication and the necessity for education and workshops. They suggested that solutions to cyber spillover dilemmas can be found through communication and collaboration between parents and faculty and noted the importance of understanding diverse parenting styles and cultural differences. Participants underscored the need for parental education on social media use and technology management, with participants advocating for workshops and resources to enhance parental awareness and skills in supporting their children's healthy tech use.

### ***Parent School Communication***

Parents may need to rely on communication with teachers to understand their child's tech use. One parent noted, "It's more of what I'm hearing and observing. Right? He hasn't really... he swears he doesn't get distracted. But after talking to teachers, I'm pretty sure he gets distracted." Parental collaboration with teachers to find solutions to cyber spillover dilemmas exemplified the use of communication between parents and schools, as illustrated by one parent:

*"My niece did have trouble in school being on her phone a lot. There was communication, back and forth where the teacher said, 'Maybe don't let her bring her phone to school' But then my sister kind of pushed back and said, 'Well, we would like her to have it there, just for like safety reasons.' But she had a conversation with her daughter that at the beginning of a class session [she had to give her] phone to the teacher."*

On a broader scale, proactive communication channels, such as community meetings and parent listening sessions, facilitate a collaborative approach to addressing concerns raised by parents and students. One youth stated,

*“There should be more times for school faculty and parents to talk about [technology]. So organized like events or meetings to try to help with that. Because I know that a lot of parents are at work, so they don't have time to do that. Or they just don't care enough to do that. Or they just don't realize. So, I think that something organized would probably help.”*

However, it is crucial to acknowledge the diverse parenting styles and cultural differences that influence parent-school interactions, as emphasized by one administrator, "That's a tricky one. Because parents are not like a one-size-fits-all, right? Parenting is very different across communities of cross-cultural differences. There are just so many differences."

Despite these variations, establishing relationship-based communication and providing avenues for parental involvement can significantly support students and families. As one administrator highlighted,

*"I don't know if there's a best way, but there's the wrong way, and the wrong way is to not do anything, right? Like if you're not addressing it at all, that is not going to support your students and your families... having a relationship with them, having the conversation like, 'Hey, your student did this thing that was a really good. And then here's this other thing that we really need them to work on and put their phone away during math class.'"*

Furthermore, as administrators discussed that many parents may not realize the resources accessible to them, thus, raising awareness among parents about available support from schools was seen as essential. Overall, fostering effective parent-school communication is integral in addressing cyber spillover among adolescents and promoting a supportive school environment.

### ***Education or Workshops***

The necessity of education and workshops for parents regarding social media use and technology management emerged as another important subtheme. Participants expressed a desire



for resources to enhance parental awareness and the relationship of technology with their children's well-being. One administrator highlighted this need by stating,

*"I have talked for years about mandating a class for parents about social media use. We can't do that. I wish, but it would just be really helpful if parents knew, there have been so many times where I have met with parents who are like, 'I had no idea that that's impacting my kid in this way,' or 'I had no idea that's when I should be having my kid turn in their phone so that they can sleep well. Oh, I had no idea this was being said online.'"*

However, this administrator went on to acknowledge the challenges of implementation, particularly in communities with limited resources and time constraints. Another administrator suggested ongoing coaching, consultations, family nights, and workshops as potential avenues of parent engagement.

Additionally, participants stressed the need for practical workshops on technology management, particularly for parents with limited technological proficiency. One participant articulated this need by sharing their own experience, stating, "What occurs to me is, for example, I'm not that good with technology, and I don't really know how to put protection on my computer." They suggested sessions where parents could bring their laptops and receive guidance on implementing safeguards to protect their children from potential online risks. Overall, participants underscored the critical role of education and workshops in equipping parents with the knowledge and skills necessary to support their children's healthy tech use in an increasingly digital world.

## Discussion

The primary aim of this study is to better understand the impacts cyber spillover has on adolescents in school from the perspective of parents, teachers, and youth. Results revealed the strong influence of cyber spillover on school climate, the role of school policies, the need for digital citizenship education, and the importance of parental involvement in mitigating these challenges. The themes highlighted by participant quotes offer valuable insights into the multifaceted nature of the issue and suggest possible methods for intervention and improvement.

Our results unveiled complexities between online interactions and the dynamics within physical school spaces. The findings concur with past research that suggests cyber spillover can shape students' experiences and interactions within the school community, with implications for educational outcomes and social dynamics (Beneito and Vicente-Chirivella, 2022; Gupta and Irwin, 2026). One notable finding is the description of online interactions leading to aggression in school settings. In congruence with past research findings, participants highlighted how conflicts originating online often escalate into in-person confrontations at school, leading to physical fights, emotional safety violations, and disruptions to the learning environment (Elsaesser et al., 2021). The prevalence of aggressive behaviors, sparked by online interactions, not only can create immediate physical harm to students, but also fosters a pervasive atmosphere of distraction, stress, and conflict within the school community (Li et al., 2021).

Furthermore, the spread of rumors, drama, and cyberbullying were prominent subcategories under aggression. Findings were similar to past research which has found that the ease with which rumors and misinformation can be disseminated online has notable implications for social interactions at school, amplifying the influence of rumors and drama (Li et al., 2023). The amplifying effect of technology on the spread of rumors highlights the need for proactive

measures to mitigate the negative impact of cyber spillover on school climate. Cyberbullying and the sharing of inappropriate content online lead to emotional distress among students (Liby et al., 2023; Nesi and Prinstein, 2015; Nesi et al., 2022). The impact of online emotional safety violations on adolescents' lives underscores the importance of fostering a supportive and inclusive school environment that addresses the psychological well-being of students.

Moreover, participants discussed how technology can impact academic and social development. Past research has indicated that heavy social media use is negatively associated with school connectedness and academic performance (Sampasa-Kanyinga, 2019). Participants suggested that tech use can impede learning by diverting students' attention and fostering an atmosphere of intimidation and distraction. Interviews described that the pervasive nature of online interactions can create barriers to effective learning, hindering students' academic performance and overall well-being. In terms of social development, our findings are parallel to past research which found that the decline in face-to-face interaction within the school environment has emerged as a potential consequence of increased digital engagement (Ventouris et al., 2021). The prevalence of digital communication platforms and the use of devices during school hours reduce opportunities for meaningful interpersonal relationships, potentially leading to increased isolation and a lack of social skills among students.

Addressing the impact of cyber spillover on school climate often involves assessing the implementation of school policies. While no universal solution is apparent, insights shared can aid in mitigating the negative effects of online behavior within the school environment. School policies establish consequences for inappropriate online behavior, and participants discussed various approaches, from confiscating phones to using restorative justice strategies or more traditional punitive measures. The importance of consistency in enforcing these consequences

emerged as a recurring theme, emphasizing the need for uniformity across all staff members to ensure fairness and accountability. This concurs with past research findings that suggest that the clarity of policies relies on proactively communicating them to families as opposed to waiting until they apply to specific situations (Su et al., 2021). As past research suggests, the role of students in reporting online behavior was highlighted as essential, meaning that students must feel comfortable reporting online behavior (Brandau et al., 2019). Participants stressed the importance of adolescents reporting concerns to school authorities promptly, with anonymous reporting systems deemed particularly effective in facilitating intervention without fear of retaliation. Moreover, monitoring technology use in school was seen as vital, but challenging. Balancing the need for oversight with fostering relationships and understanding students' perspectives is crucial for creating a conducive learning environment. This has been established in past research which shows the benefits of a psychologically safe environment for students to express concerns and needs (Hardie et al., 2022). Note that perspectives from administrators revealed the immense amounts of time that is spent mitigating the impacts of cyber spillover, therefore solutions must accommodate the time and energy available to administrators.

Another key aspect highlighted by participants is the need for education to instill an understanding of the risks associated with online behavior. Many adolescents may not fully grasp the potential consequences of their actions online, making education essential in raising awareness about privacy, cyberbullying, and the permanence of digital footprints. By providing students with instruction on digital citizenship, schools can equip them with the tools to make informed decisions that may mitigate the negative impact of cyber spillover on school climate (Bocar and Ancheta, 2023; Su et al., 2021). Additionally, some participants emphasized the importance of creating a learning environment that encourages students to learn from their

mistakes and redirect their behavior. This perspective recognizes that adolescents are in a stage of exploration and boundary-testing, and education should focus on guiding them toward responsible use of technology rather than solely imposing restrictions (Gleason and Gillern, 2018; Jones and Mitchel, 2016).

Furthermore, participants discussed the importance of building relationships between students and educators to be able to effectively address technology with adolescents. This approach recognizes that enforcing rules without considering the perspectives of students may lead to tension, which has been suggested in past research (Anyon et al., 2018). By incorporating technology into positive, constructive activities and engaging students in discussions about responsible use, schools can cultivate a more positive relationship between adolescents and technology.

Parents collaborating with schools is a crucial aspect to consider in addressing the experiences of cyber spillover among adolescents. As past research has suggested, participants highlighted the importance of ongoing communication between parents and school staff to identify and address issues related to cyber spillover (Su et al. 2021). Participants proposed individual discussions between parents and teachers and/or administrators, as well as broader efforts such as community meetings and parent listening sessions. By fostering relationship-based communication and providing opportunities for parental involvement, schools can create a supportive environment that promotes collaboration between home and school in addressing cyber spillover concerns. Participants also emphasized the importance of providing education to improve parental awareness and skills in supporting their children's healthy tech use. This need has also been demonstrated in prior research (Caivano et al., 2020). Some ideas participants suggested were ongoing coaching and consultations and practical workshops on technology use.

By equipping parents with the necessary knowledge and skills, schools can empower them to play an active role in promoting responsible digital citizenship and mitigating the negative effects of cyber spillover on school climate.

However, participants also acknowledged the challenges associated with implementing these ideas, particularly in communities with limited resources and time constraints. Addressing these challenges requires effort from schools, parents, and communities to prioritize the importance of parental education and support in addressing cyber spillover among adolescents. Overall, fostering effective parent-school communication and providing education and workshops for parents are potential integral components of a comprehensive approach to addressing cyber spillover and promoting a safe and supportive school environment.

### **Limitations**

The findings of this study must be understood within the confines of its limitations. Firstly, due to the qualitative nature of the study and the small sample size, these results cannot be generalized regarding the broader population of parents, adolescents, and administrators. Also, the sample is mostly Caucasian which could limit the applicability of the findings across diverse racial and cultural groups. Note that the youth were more diverse than adults. The youth sample was 62.5% Caucasian, the adult sample was 75% Caucasian, and the administrator sample was 100% Caucasian. Future research endeavors should aim to use a more diverse sample to include a wider range of perspectives.

Also, the questions asked inevitably reflect the inherent biases of the research team. Furthermore, this study does not consider the effects of cyber spillover over time. A large-scale, longitudinal quantitative study could determine the temporal nature of cyber spillover on the school environment. Another limitation is that only perspectives from a mid-sized and a

metropolitan city were included. The differences between rural and urban educational settings and the differences between schools in general, along with varying school policies, could potentially impact parental behaviors and participants' encounters with adolescent cyber spillover differently. Moving forward, research efforts should prioritize the implementation and evaluation of targeted interventions aimed at mitigating cyberbullying rather than merely discussing its prevalence. This shift towards intervention-focused investigations holds promise for effecting tangible changes in addressing this issue.

## Conclusion

The examination of cyber spillover within the school context has revealed the complexities surrounding online interactions and in-person dynamics, highlighting the impact of technology on adolescent experiences. Through qualitative analysis and insights from parents, educators, and adolescents themselves, this study has shed light on the multifaceted nature of cyber spillover and its implications for school climate, academic performance, and social development.

Creating a positive school climate requires addressing various elements that influence student interactions, particularly in the digital realm. Participants discussed how online behaviors, such as aggression, rumors, and drama, often spill over into the school environment, leading to emotional safety violations and impediments to learning. It was also illuminated that effective school policies must be consistent and realistic, considering the administrative bandwidth to enforce them. Furthermore, it's crucial to create an environment where students feel safe reporting issues, balancing the need for monitoring with the necessity to maintain trust. Participants also emphasized that digital citizenship education is essential for guiding students on responsible online behavior. Additionally, fostering ongoing communication between parents and the school through diverse channels ensures families are well-informed about digital citizenship and practical technology use. This comprehensive approach helps in cultivating a supportive and secure atmosphere conducive to both academic and personal growth.

Considering the limitations of this study, future efforts should strive for a more diverse representation to ensure the generalizability of findings across different racial and cultural groups. Additionally, longitudinal studies could provide valuable insights into the temporal nature of cyber spillover and its long-term effects on the school environment. In conclusion, this



study has provided valuable insights into the complex dynamics of cyber spillover within the school context and offers recommendations for intervention and future research. By fostering collaborative efforts between parents, educators, and communities, schools can create a supportive and inclusive environment that promotes responsible technology use and prioritizes the well-being of adolescents in the digital age.

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