

Children's use of social networking sites: Risk and benefit perceptions and outcomes

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Abstract

Immersed within a digital age, children aged 7-12 years (the iGeneration; Turner, 2015) and adolescents are engaging with digital technologies, especially social networking sites (SNS). A recent Ofcom (2019) report identified that 21% of 8-11 year-olds and 71% of 12-15 year-olds own a SNS profile, despite the age restrictions averaging 13 years. Children's increasing digital engagement enables active participation within their construction of reality, which evokes adultist fears (Corsaro, 2015; James & Prout, 1997), such as the long-term outcomes upon children's socio-emotional wellbeing (Bryce, 2010; Livingstone & Blum-Ross, 2017). Yet, little is known about what these outcomes may be. This thesis explores children's understanding of the risks and benefits of SNS use using both Psychological and Sociological perspectives and a mixed-methods approach. Specifically, I assess children's SNS use, perceptions and behaviours in studies 1-3 and later socio-emotional outcomes in study 4. Studies 1 and 2, quantitative cross-sectional online surveys, explore adolescents' (aged 13-18; N=400) and children's (aged 7-12; N=800) perceptions of the risks and benefits of SNS use, respectively. Study 3, with qualitative one-to-one semi-structured interviews, explores children's (aged 7-12, N=15), parents' (aged 28-48; N=13) and teachers' (aged 26-54; N=14) perceptions of SNS use and, with adults, internet mediation behaviours. Study 4, a quantitative longitudinal online survey, explores children's (aged 7-12; N=300) SNS behaviours and their association with self-esteem, wellbeing, anxiety and depression (6 months later). This thesis' findings identify that adolescents and children (aged 7-12 years) are using SNS and that their online behaviours predict outcomes which are associated with risks and benefits. Adults' perceptions of the risks and benefits of SNS use are misaligned with children's reality and are limiting their access to broader benefits. Bridging social capital online and exploring the self is associated with beneficial outcomes over time.



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Introduction

This thesis focuses upon children's risk and benefit perceptions and behaviours on social networking sites (SNS) and the implications upon mental health and wellbeing. A particular focus is placed upon primary school children aged 7-to-12 years: the iGeneration (iGen; Turner, 2015). Having only known a world embedded in digital technology, the iGen have a unique relationship with digital usage (Livingstone & Blum-Ross, 2017). Due to the age restrictions upon SNS averaging 13 years there is the misconception that the iGen are not using these sites. It is becoming increasingly recognised that, in fact, they are. An increase has been identified amongst 8- to 11-year-olds (18% in 2018; 21% in 2019) and 12- to 15-year-olds (69% in 2018; 71% in 2019; Ofcom, 2019). Yet, a nuanced understanding of the iGen's SNS use and the potential implications remains limited.

This topic is embedded within psychological and sociological frameworks. Experience and interactions within everyday life shape our perceptions, socially constructing what we consider as reality (social constructionism; Hammersley, 1992; Hewitt & Shulman, 1979). To investigate these constructs in relation to the iGen's SNS use, four topics will be investigated via a mixed methods approach: 1) adolescents' risk concern and perception of the benefits of SNS use; 2) children's risk and benefit behaviours on SNS; 3) the role of parents and teachers within the iGen's risk and benefit perceptions; 4) the longitudinal relationship of the iGen's SNS use upon their self-esteem, wellbeing and mental health. This thesis will inform parents, practitioners and policy makers about both the protection and empowerment of the children, aged 7-to-12 years, within the digital age.

Throughout this thesis, the sociological constructs of childhood and social constructionism – understanding of the world developed by societal assumptions (Burr, 2015) – will be addressed. These provide an important conceptual framework for the thesis. The first chapter of this thesis will introduce these constructs and their contemporary influence within the digital age. The United Nations Rights of the Child charter (UNRC in 1989; Lundy, 2007) was pivotal in reframing the social roles of children. Their introduction of the three Ps (Protection, Provision and Participation) evoked much debate concerning children as active through exerting autonomy in decision-making (Cortes et al., 2009) and passive through being submissive to the



decision-making of others (Casemajor et al., 2015). Collectively, this prioritised children's rights, which are shifting within the digital age. This chapter explores how and why children's rights are being impacted within the digital age and how this may shape the iGen's risks and benefit behaviours on SNS.

The first chapter shall also explore current findings regarding the risks and benefits of SNS use, largely conducted with adult populations. In order to ensure the validity of this thesis' findings specifically to the iGen, a comparison with adolescents (or Generation Z; Turner, 2015) is also required. Adolescence considers the developmental stage between pubertal development and independent adulthood (Frech, 2012). Due to Facebook's (the first widely recognised SNS) creation in 2004 and its members comprising 100 million in 2008, in comparison to 2.6 billion in 2019 (Statista, 2020), those born from 1995 to 2008 experienced a different digital environment during their upbringing compared to the iGen. Generation Z (Gen Z) in this thesis therefore considers those aged 12-24 years, but specifically only those aged 12-18 years are investigated to ensure that autonomy is more comparable between Gen Z and the iGen. This chapter will also introduce the current known risks and benefits of SNS use. These risks and benefits will relate to social capital: formation and maintenance of social networks (Putnam, 1993); impression management particularly in terms of self-presentation: manipulation of the self based upon self-concept goals or social norms (Goffman, 1959); cyberbullying: repeated intentional online harm (Tokunaga, 2010); online over-disclosure: inappropriate information revealed to misjudged audiences (Kim & Dindia, 2011).

The first chapter will also discuss the potential relationship between these behaviours and mental health and wellbeing. Due to current findings within literature identifying these outcomes related to SNS use, a focus will be placed upon self-esteem: opinion of the self (Gray-Little, Williams & Hancock, 1997); anxiety: ongoing and intrusive worry (Jablensky, 1985); depression: persistent sadness and loss of interest (Rottenberg, 2005). Again, despite limited literature considering the iGen's mental health and SNS use, this chapter will evaluate current research and consider its applicability to the iGen.

The second chapter of this thesis will address the mixed methods approach adopted. A mixed methods approach will ensure that this thesis' findings are nuanced and address both the conceptual and contextual notions of this topic. This chapter will clearly outline the methodology of this thesis and its rationale.



Chapters 3, 4, 5 and 6 present the empirical work of this thesis via 4 studies. Chapter 3 presents a quantitative exploration of adolescents' (aged 13-18 years) concerns of the SNS risks and perceptions of the benefits in a cross-sectional study. Chapter 4 quantitatively investigates children's (aged 7-12 years) risk and benefit behaviours on SNS in a cross-sectional study. Chapter 5 develops these findings further via one-to-one interviews to investigate parents', teachers' and children's risk and benefit perceptions of SNS use. Chapter 6 will quantitatively investigate the relationship between children's SNS behaviours and their mental health and wellbeing over time via a longitudinal study.

The final chapter of this thesis will summarise and critique the findings throughout this thesis, drawing conclusions regarding the iGen's risk and benefit perceptions and behaviours and the potential relationship with mental health and wellbeing.



Chapter 1

Literature Review

1. Social construction of the digital age

Our perception of reality is shaped by our social interactions, this process is known as social constructionism (Burr, 2015; Postman, 1994). Specifically, our interactions represent social symbols which reflect the society we live in: symbolic interactionism (Blumer, 1986; Postman, 1994). Active and passive interactions are particularly important within symbolic interactionism and social constructionism (Craib, 1984; Corsaro, 2015). Active interactions reflect independence, agency and freedom (Carlisle et al., 2009; Miller & Rose, 2008); for example, owning an internet-connected mobile phone with access to all settings and apps at any time. Passive interactions, on the other hand, render the individual powerless as a recipient of action (Killen & Wainryb, 2000; Schwanen & Ziegler, 2011); for example, relying on another's internet-connected device as well as their discretion of which settings and apps can be used and when. Roles within society are symbolised by how active or passive they are within everyday interactions. As these roles change over time, they reflect evolving perceptions of reality within society. Thus, our reality is socially constructed.

The evolution of the internet has altered perceptions of communication and this is reflected within the symbolic interactions on SNS. For example, in the past, social plans would be organised face-to-face and required active participation from all individuals involved. Via SNS, however, social plans can be organised, changed and cancelled with far greater ease and speed (Rasmussen, 2019). Active and passive roles are clearly changing in the digital age, and thus the role of SNS is governing a great deal of social construction. This is further impactful upon the concepts of childhood.

Concepts of childhood are formed via symbolic interactionism within an adult reality (McPhee & Bronstein, 2002; Woodfall & Zezulkova, 2019). Adults have greater life experience than children and are biologically more developed, so childhood is perceived as encapsulating vulnerability and innocence (Holloway & Valentine, 2003). Typically, throughout history, children have been interpreted as passive within social constructionism (James & Prout, 1997; Hendrick, 2015). This does not, however, mean to say that they have been invisible. Although very present within the family and social dynamics, children lacked choice autonomy and the input of adults was required



(Holloway & Valentine, 2005; James & Prout, 1997). For example, despite children as young as aged two working in the Victorian mines (Heywood, 2017), their role was still passive in society as it was their parents' decision to put them into work rather than their own. Further, should they wish to refrain from such work, they had no choice autonomy in the matter.

Rendering children passive but developmentally distinguishable from adults presents the concept of adultism: viewing adults as “superior in all skills and virtues to all children” and positioning children below adults hierarchically, rather than allowing dynamic social positioning (p.517; Flasher, 1978). Where adultism is present within symbolic interactions, social construction develops an adultist society (Corsaro, 2015).

The creation of the internet has enhanced access to symbols which socially construct an adult reality (i.e., connecting with strangers, witnessing violent or sexualised content, interacting with financial activity; Livingstone & Third, 2017). Developmentally, children may experience trauma if exposed to adult symbols (Stolbach et al., 2013). It is therefore important for children to have their own appropriate reality (Livingstone & Third, 2017). Further, children's reality is monitored by adults as it is rare that a child is in an environment where adults are not present (e.g., school, home; Corsaro, 2015). The internet, however, presents an environment where a child can socialise independently of adults (Corsaro, 2015).

The digital age is challenging these concepts culminating in the post-modern child: capable of independence and the choice of active and passive participation within society (Corsaro, 2015; Jenks, 1996). As children develop within this reality, they are becoming increasingly digitally literate (Livingstone & Third, 2017). Having only ever known this reality, the iGen are capable of independently engaging with digital use (Livingstone & Third, 2017). The post-modern child is not passive, but active in their reality.

Importantly, the post-modern child of this thesis is contextualised within a western-centric culture (Trommsdorff & Kornadt, 2003). Hakutani (2002) argues that post-modernity symbolises freedom, expression and is embedded within capitalist society, thus comprising a western construct. Eastern cultures are largely shaped by tradition and are less individualistic (Motak, 2009). As a result, post-modernity is conceptually different within collectivist cultures (Wang & Edwards, 2017). In response to this, the sociological framework of this thesis is embedded within western reality.



Within a western adultist society, the post-modern child is problematic. Adults want to protect children but this is increasingly difficult where the iGen are digitally literate and capable of online independence. Furthermore, the digital age encourages online use. As aforementioned, socialising online is becoming more and more important, representing a symbolic interaction within the digital age. In order to socially engage, the iGen are seeking online communication (Livingstone & Hadden, 2009). Denying this oppresses children, particularly their development, their voice within society, and their opportunity to actively contribute to social construction (Corsaro, 2015; Livingstone & Third, 2017). Enabling this, however, develops what is often referred to as moral panic (Woodfall & Zezulkova, 2019) over the vulnerability and innocence of childhood (Woodhead, 2015). Faced with this challenge, adultist society prioritises the protection of childhood via enhanced observation and control, known as panopticism (Bentham & Božovič, 1995; Brignall, 2002; Foucault, 1977). Arguably, this attacks the rights of the child (Lievens et al., 2018).

In order to protect childhood, adultist societies utilise panoptic techniques (Lievens et al., 2018). Offline examples of these include physically monitoring children (e.g., only allowing children to play where they can be seen by adults; Jenks, 2005), managing children's friendships (e.g., only allowing children to play with friends considered acceptable by parents; Holloway & Valentine, 2000) and managing children's social spaces (often limited to the home, school, friend's house and extracurricular activity venue; Bradshaw, 2016; Holloway & Valentine, 2000; Wyness, 2019). The post-modern child, however, is experiencing less freedom within physical spaces due to adultist fears (Corsaro, 2015; Livingstone & Third, 2017). As a result of this, children are spending less time playing outside than previous generations and are seeking entertainment within the home (Livingstone & Third, 2017). With increasing access to digital spaces within the home environment, children are engaging online which challenges adultism and evokes further panopticism (Livingstone & Bober, 2005).

Online, adultist panopticism comprises restricting children's digital use altogether (Livingstone & Bober, 2005), installing site blockers or monitoring software (Baldry, Sorrentino & Farrington, 2019) and watching children's digital use (Duerager & Livingstone, 2012). Although effective in protection, this minimises the iGen's opportunity for participating within the digital age (Lievens et al., 2018; Livingstone & Third, 2017).



Discussing notions of active and passive roles within social construction is important for this thesis as it provides a sociological understanding for how the iGen may perceive the risks and benefits of SNS use as well as how they may behave online. It is also important for considering how parents and teachers may perceive the risks and benefits and how this shapes their internet mediation behaviours. In order to address these aspects of the thesis further evaluation will be undertaken specifically focusing upon the rights of the child and panopticism within the digital age.

1.1. The rights of the child

The United Nations Rights of the Child (UNRC) charter in 1989 was pivotal in challenging societal concepts of the child (Detrick, 1999; Lundy, 2007). The UNRC presented the importance of the three Ps: Protection, Provision and Participation. Being developmentally different to adults, children are both psychologically and physically vulnerable, thus, children require protection. Extending from this, due to these differences, children are limited in their access to certain aspects of society (e.g., legal and financial services). Therefore, children also require provision. Further, as opposed to being passive, children are capable of actively participating within society. The UNRC states that it is a child's right to actively participate whilst simultaneously experiencing protection and provision. The emphasis upon the collaborative nature of the three Ps is symbolic of the shifting perception of childhood (Livingstone & Third, 2017). The digital age presents a challenge to children's rights. It is therefore debated as to what extent the UNRC's three Ps are being considered in children's rights to participate online (Livingstone, 2005, 2014).

Due to the rapid development and prevalence of SNS, adultist societies are concerned about children's SNS engagement (Livingstone & Third, 2017). As previously discussed, the iGen are able to access adult symbols online; this presents developmental risks as well as a threat to the current concept of childhood (Woodhead, 2015). To mitigate these risks, adultist societies prioritise protection (Livingstone & Third, 2017). Specifically, in terms of SNS this is reflected within the symbolic interaction of public attitudes and restrictive monitoring of children's SNS use (Livingstone & Helsper, 2007). Public attitudes widely demonise children's SNS use and this is identifiable within the media. These attitudes manifest within restrictions upon children's SNS use. Examples of these include age restrictions, denying use, time limits, etc (Livingstone et al., 2015). Of course, limiting access protects children from



the risks (Livingstone & Third, 2017). In accordance with the UNRC, this indeed adheres to children's right for protection. Problematically, however, prioritising protection hinders provision and thus participation (Lievens et al., 2018). Opposing the regulations of the UNRC, it is arguable that within the digital age a hierarchical model of children's rights is being implemented with protection taking priority (Livingstone & Third, 2017).

The notion of provision is challenging within the digital age. Even where provision is considered, this tends to be skewed towards adultist beliefs (Bernardini, 2014). For example, age restrictions on SNS average 13 years: the beginning of the 'teens' and perceptions of adolescence. Technically, adolescence commences at the onset of pubertal development; socially, it is marked by entering the 'teens' and thus becoming a 'teenager' (Frech, 2012; Offer, 1987). This is widely viewed as the end of childhood as symbolic interactions change predominantly in terms of migrating away from the parents and developing independence (Corsaro, 2015; Frech, 2012). Symbolically, this marks the end of innocence and vulnerability as perceived by an adultist society (Corsaro, 2015; Thornburg, 1986). Linking this back to SNS use, this represents how provision is prioritised once the threat to childhood is minimised. But this is not in accordance with the UNRC. The iGen should not lack provision due to adultist concerns. In doing so the iGen are limited in their access to the opportunities online.

Online participation poses the greatest threat to adultism. Enabling the iGen's SNS use, via provision, enhances their active participation; this challenges both the concept of childhood and the role of the child (Livingstone & Third, 2017). Regarding the concept of childhood, SNS use threatens innocence and vulnerability. The risks, such as communicating with strangers, cyberbullying and impaired mental health, directly impact childhood with potentially long-term consequences (Livingstone et al., 2015). Online participation also threatens adultism in terms of the role of the child. Within adultist societies children are rendered passive due to their vulnerability requiring adult protection (Bernardini, 2014; Corsaro, 2015). Engagement with SNS facilitates active participation (Livingstone, 2005). Allowing children access to adult symbols shifts the power balance away from active protective adult and passive innocent child to a more equal, yet ambiguous, dynamic (Crawford, 2009; Woodhead, 2015). Children as active participants blur the current concept of childhood (Woodhead, 2015). This is particularly the case with the iGen who have only known a digital reality



and have developed digital literacy faster, and in many cases at a more advanced level, than adults (Livingstone & Third, 2017; Rosen, 2010). Therefore, allowing the iGen to actively participate online potentially renders adults passive. This uncertainty within adultist society creates social unrest, which manifests within a moral panic and stricter protection (Crawford, 2009; Livingstone et al., 2015; Woodhead, 2015). In terms of SNS use, the ambiguity of children as active and the risks upon childhood are driving adultism away from participation and towards protection (Livingstone, 2005). Specifically, in relation to the iGen and the digital age, this focus upon protection is manifesting within restrictive internet mediation behaviours (Livingstone, 2017).

SNS therefore presents a challenging reality for the interpretation of the rights of the child. In order to empower children's active participation within social constructionism, it is vital to adhere to the interchangeable ethos of the three Ps (Lundy, 2007). Children require protection yet need sufficient provision in order to participate. Oppressing children's provision prioritises protection and ultimately diminishes participation, rendering the child passive. Currently, protection is being prioritised at the expense of participation, arguably regressing children's rights (Livingstone & Third, 2017).

Enhancing protection breeds panopticism: enhanced control and observation (Bentham & Božovič, 1995; Brignall, 2002; Foucault, 1975; Galic, Tiilman & Koops, 2017). Enhanced through technical regulations and limiting active participation within a digital age, the iGen are currently experiencing a digital panopticon. Digital panopticism is relevant to this thesis for it contextualises wider societal attitudes towards the iGen's SNS use which in turn shape adults' and children's perceptions and behaviours. Examining digital panopticism builds an understanding of how the iGen are accessing SNS and what may influence their risk and benefit behaviours.

1.2. Panopticism in a digital age

Derived from philosophical literature in the 1700s, the figure of the Panopticon presents a sociological symbol of heightened observation and control (Bentham & Božovič, 1995). Technology has enhanced panopticism due to the ease of surveying on a grander scale, this has been theorised as post-panopticism (Galic, Tilman & Koops, 2017). Of interest to this thesis, specifically, is the theory of social post-panopticism (Ammari, et al., 2015; Lupton 2016; Livingstone, 2016).



Via SNS, social interactions are easily accessible; this is especially the case with public online activity. In relation to the iGen, social post-panopticism extends further in terms of parental monitoring (Livingstone, 2016). Adultist fears of the internet corrupting childhood contribute to the monitoring of children's online activity. For instance, software can be installed to update parents about their child's browsing and searching history and policy regularly recommends that parents only allow their child online access within communal spaces in the home (Livingstone, 2016). Social post-panopticism manifesting itself in these behaviours renders the iGen passive. Being constantly monitored and disallowed online autonomy minimises children's opportunity to actively participate within the social construction of the digital age (Livingstone & Helsper, 2017).

In practice, social post-panopticism is reflected within parenting styles. Parenting styles are shaped by the goals of the parent, which are based within social domains (Darling & Steinberg, 1993; Green et al., 2007; Lee, 2013). These social domains include permissive (lack of any explicit boundaries), laissez-faire (limited involvement), authoritative (clear expectations without limitation) and authoritarian (expectation of complete obedience; Baumrind, 1991). Mediating behaviours (strategies used to minimise risks and maximise benefits; Jiow, Lim & Lin, 2017) are based upon these styles founded within one of these domains (Darling & Steinberg, 1993; Lee, 2013). Panopticism, as a component of adultism, influences these social domains for they are embedded within societal beliefs (Streuli, 2015).

Reflecting the societal beliefs of the digital age, parenting styles are adapting (Livingstone, 2017; Valcke et al., 2010). Internet parenting styles comprise of restrictive mediation (ultimate goal of limiting access to risks) and enabling mediation (ultimate goal of enhancing access to opportunities and subsequent benefits; Livingstone, 2017). These styles govern six distinct mediation behaviours. Behaviours based upon restrictive mediation styles appear the most prominent (Livingstone, 2017). Examples of these behaviours are denying or restricting access to SNS, limiting time of access, checking history and filtering/blocking via the use of software. Whilst behaviours based upon enabling mediation styles consist of supervision/co-use, and interpretive mediation (Livingstone, 2017). Examples of these behaviours include a parent sharing an SNS account with their child or openly discussing SNS use.

We know from a wealth of literature that parental mediation behaviours influence children's perceptions and behaviours (Garmendia et al., 2012; Laskey &



Cartwright-Hatton, 2009). In terms of internet parenting styles, internet mediation behaviours may shape the iGen's online access in general as well as their perceptions and behaviours; albeit, there is limited research investigating this relationship within the iGen, particularly in terms of SNS use.

Restrictive internet mediation behaviours are adopted by parents with a negative perception of children's online use (Lee, 2013; Nikken & Jansz, 2014). Lee (2013) identified that restrictive internet mediation behaviours predict children's negative perceptions and less time spent online (especially for the iGen). In fact, the iGen are more likely to experience restrictive internet mediation behaviours regarding time spent online than Gen Z (Nikken & Jansz, 2013; Symons et al., 2017). In terms of protection, this is beneficial; restricting the iGen's online access reduces the risks (Lee, 2013). In terms of participation, however, this could be argued as a violation of children's rights within the digital age (Livingstone, 2017; Lundy, 2007). Restrictive internet mediation behaviours render the iGen passive as adults' active panopticism limits their online autonomy.

If we consider the opposite of social post-panopticism, we are met with a permissive approach; this approach strikes similarities with the laissez-faire approach identified within traditional parenting styles. In terms of internet parenting styles, this is reflected within enabling internet mediation behaviours such as complete access to the internet with little to no parental input (Livingstone et al., 2017). Enabling internet mediation behaviours are adopted by parents with positive perceptions of children's internet use (Lee, 2013; Nikken & Jansz, 2014; Symons et al., 2017). Enabling internet mediation behaviours enhance children's access to online opportunities, which supports their active participation (Livingstone & Third, 2007). Furthermore, children who experience enabling internet mediation behaviours are more likely to have positive perceptions of the internet (Livingstone, 2017; Symons et al., 2017). This is beneficial in terms of children's rights as they are empowered in their online behaviours and thus are active within social construction (Livingstone & Third, 2007).

The difficulty with a completely permissive approach, however, is that it unbalances the UNRC's three Ps (Lundy, 2007). Allowing complete participation enhances risks (Lievens et al., 2018; Woodhead, 2015). Specific to SNS use, children with unregulated access are more likely to be exposed to the online risks (Livingstone, 2017). Not only does this challenge adultist fears of the destruction of childhood, it also enhances concerns regarding children's psychological and physical safety. Thus,



although social post-panopticism renders the iGen passive due to limiting participation, ignoring protection altogether also violates children's rights as they become victim to negative outcomes that could have been mitigated by adult mediation.

Rather than complete panopticism, provision shaped by interpretive interactions may provide a more balanced approach to the three Ps (Livingstone, 2017; Lundy, 2007). As opposed to consistently maintaining one mediation style, interpretive internet mediation behaviours combine aspects of both restrictive and enabling behaviours dependent on the child and the situation (Livingstone, 2017). An example of interpretive mediation, specific to SNS, is co-use; this is where parent and child either share an SNS account or only use SNS together (Livingstone, 2017). In terms of digital technology use, in general, we know that co-use with children is beneficial for social learning. Plowman et al. (2012) explored infants' and young children's digital technology use in the home finding that the children whose parents were positive about technology and co-used with them developed abstract social skills (e.g., communicative turn-taking via video and text; communicating through images) at an early age. Further, Livingstone (2017) identified that children with parents who present interpretive internet mediation behaviours are just as likely to encounter the risks and benefits of those with permissive parents but are more knowledgeable about both the risks and benefits. It could therefore be argued that enhancing provision encourages participation with appropriate protection thus adhering to the UNRC's three Ps (Lundy, 2007).

Although research has considered the internet mediation behaviours of parents, such consideration of teachers is scarce. Teaching styles generally, however, have been explored as an extension of Baumrind's (1966) parenting styles (Uibu & Kikas, 2014). Combining this with Livingstone's (2017) internet parenting styles, an understanding of internet teaching styles can be developed.

An authoritarian teaching style refers to the classically 'strict' teacher exerting control and limiting pupil autonomy (Aunola & Nurmi, 2004; Chen, Dong & Zhou, 1997). Authoritarian teachers are typically very structured and inflexible in their teaching practice (Cohen & Amidon, 2004). Such an approach commonly aligns with adultist beliefs characterised by perceptions of hierarchy and social rigidity (Tate & Copas, 2003; Skelton & Gough, 2013). In terms of the digital age, authoritarian teachers are likely to engage in adultist panopticism (Livingstone & Bober, 2005) enhancing protection over the concept of the child. This may manifest within restrictive internet mediation behaviours such as not discussing online use at all, let alone SNS use, and



actively discouraging children from using SNS. Such behaviours may limit children's e-safety learning (Annansingh & Veli, 2016; Sharples et al., 2009; Šimandl, 2015). Although this may deter children from using SNS, thus protecting them from the risks, it may equally limit their access to the benefits (Livingstone, 2017). On the other hand, children may go online anyway and be exposed to the risks with a limited knowledge of how to protect themselves (Annansingh & Veli, 2016) and fear of informing their teacher should they require help (Campbell, Butler & Kift, 2008; Holfeld & Grabe, 2012; Peebles et al., 2014).

On the opposite end of the spectrum, a permissive teaching style depicts teachers who allow pupils extreme autonomy with limited restriction (Uibu & Kikas, 2014). Walker (2008) states that permissive teachers are often inconsistent in their expectations of children, which Skinner, Johnson and Snyder (2005) argue fosters a chaotic learning environment. As opposed to an authoritarian teaching style, this approach unbalances the three Ps by prioritising participation without enough consideration of protection and provision. Rather than authoritarian teachers, who are very explicit with rules, a permissive teaching style will consist of balancing neither the risks, benefits nor school expectations of pupils' SNS use. Where a permissive teacher openly discusses SNS use, but does not outline the risks and benefits, children may feel encouraged to access SNS themselves, experiencing the risks due to a lacking understanding of how to protect themselves (Annansingh & Veli, 2016). Where a permissive teacher does not discuss SNS use, and does not enquire into their pupil's usage, children may be experiencing the risks online and suffering in silence, unknowledgeable of who can help (Elledge et al., 2013; Holfeld & Grabe, 2012; Olenik-Shemesh & Heiman, 2014).

An authoritative teaching style presents a more balanced approach whereby rules are established but are also flexible (Baumind, 1991; Ertesvåg, 2011). It is widely considered that an authoritative teaching style positively enhances teacher-pupil relationships (Baker et al., 2002; Connor et al., 2005). Further, Hughes (2002) suggests that authoritative teachers encourage pupil autonomy. When applying this to SNS use, an authoritative teacher may outline the age restrictions of SNS use, as well as the risks, but may also discuss the benefits and SNS use in general more openly with pupils. If similarities exist between an authoritative teaching style and interpretive parental mediation, it could be argued that authoritative teachers are more effective in addressing the three Ps.



1.3. Summary

This chapter has explored the social construction of the digital age, considering its importance in the iGen's access to the risks and benefits of SNS use. It is argued that within the digital age adultism is governing societal attitudes towards the notion of the child online. Prior to the creation of SNS, or the internet in general for that matter, this concept of childhood could be systematically protected. Within the digital age, however, maintaining the adultist symbol of the child has become a challenge. In order to engage within the digital age the iGen seek online access, particularly SNS use. Having only known a world where SNS exists, its usage is an expectation of the iGen's reality. Allowing such usage, however, threatens the adultist concept of childhood. Online autonomy reflects adultist symbols such as freedom to socialise whenever with whomever, access to any content including age inappropriate material, and more. Allowing children this level of independence is not symbolic with the adultist perception of the child as passive and protected, but rather this presents the active child.

To mitigate the corruption of the adultist's concept of childhood, social post-panopticism is enhanced; most identifiable within parental internet mediation behaviours, social post-panopticism priorities protection. We know that protecting the iGen via restrictive internet mediation behaviours reduces time spent online and thus exposure to the risks; in doing so it also minimises access to and perceptions of the benefits. According to the UNRC Charter, this is not good enough. Of course, children have the right to protection, but equally they have the right to provision and participation. Even enabling internet mediation behaviours do not balance these rights. Interpretive internet mediation behaviours may address children's rights more accurately, but we do not know enough about this in terms of the iGen. Exploring societal beliefs and parental internet mediation behaviours are crucial in understanding the broader context to what defines the iGen's access to the risks and benefits of SNS use.

Further questions remain unanswered: 1) what are the risks and the benefits of SNS use? 2) do these relate to the iGen? 3) are there long-term implications upon the iGen's development? To consider potential answers to these, empirical research will be critiqued.



2. Risks and benefits of SNS use

Since the creation of Facebook in 2004, the popularity of SNS has dramatically increased. SNS, such as YouTube in 2005, Twitter in 2006, WhatsApp in 2009, Instagram in 2010, and TikTok in 2020, have paved the way for digital communication. Engagement with these SNS has become a core component for active participation within the digital age. The evolution of SNS presents a new reality with many benefits for a connected society. On the other hand, the rapid growth of SNS presents many risks that society has not had time to effectively evaluate yet. When considering the adultist concept of childhood, it is unsurprising that panic is rising and manifesting within social post-panopticism.

In order to explore current understanding of the risks and benefits of SNS use and how the iGen may be engaged with these, this section will critique empirical findings. Due to the limited amount of empirical research investigating the iGen's SNS use, findings from all age ranges will be evaluated in order to gain an overall understanding of current known risks and benefits of SNS use. Considerations of how these then may apply to the iGen will be prioritised.

2.1. Known risks and benefits of SNS use

2.1.1 Social capital

The ability to connect with anyone anywhere anytime has reconstructed the parameters of connectedness (Meikle, 2016; O'Shea & Campbell, 2011). Enhanced opportunity to connect is hugely beneficial upon social capital (Putnam, 1993). Although discussed more broadly within sociological literature, social capital (the formation and maintenance of social networks; Putnam, 1993) encapsulates important psychological features, such as ingroup membership and feelings of connectedness and belonging (Pretty & Smith, 2004; Yuan & Gay, 2006; Zhao et al., 2012). SNS provides a unique space for social capital management.

Bonding and bridging social capital are essential components of social capital (Putnam, 1993; Patulny & Svendsen, 2007). Bonding refers to "trust-based strong ties" formed with attached individuals, whilst bridging consists of forming new relationships (p.1499, Young Lee, 2013; Putnam, 2000). In terms of SNS use, bonding behaviours include connecting with family members and friends who are also part of an individual's offline social capital (Ellison et al., 2007). Bridging online includes



behaviours such as adding contacts who are unknown offline and joining online groups and communities (Steinfeld, Ellison & Lampe, 2007).

Bonding social capital presents many benefits for the SNS user. A particular benefit is that of bonding with family members. The sharing of family discourse: everyday mundane information and occurrences with family members (Huisman, 2014), which enhances the benefits of ingroup membership, such as connectedness and belonging (Ribbens McCarthy, 2012). In fact, Galvin (2006) argues that family discourse is crucial in forming ingroup identity, especially for untraditional family types (e.g., separated or divorced households). Through SNS, the opportunity for family discourse is advantageous for bonding. Family members can interact in many different ways via SNS on a constant basis. Williams and Merten (2011) even reported that family bonds are strengthened via SNS; these findings have been replicated by Padilla-Walker, Coyne & Fraser (2012) regarding broader digital devices (mobile phones and video gaming), as well as by Takeuchi (2011) regarding parent-child connections. Bonding social capital with family members therefore presents a benefit to the SNS user.

Bonding social capital with friends is also a particular benefit of SNS use. A key benefit of SNS upon bonding social capital is that of the limitless opportunities to connect. SNS interfaces provide so many different functions for quick and easy communication (e.g., comments, direct messages, posts, likes, shares; Shane-Simpson et al., 2018; Williams, 2019). These easy interactions are especially useful for busy individuals, for friends across geographical distances and for those with financial constraints (Corsaro, 2015).

Bridging online presents further benefits. Navigating around SNS to bridge is far easier and efficient than offline (Mazzoni & Iannone, 2014; Tuomi-Gröhn & Engeström, 2003). Financial and geographical limitations, for example, are lifted as anyone can be contacted anywhere for free (Wood & Smith, 2004). This ease of communication is especially beneficial for those living in small homogenous communities who seek more varied friendships (Preece, 2000). Bridging online can also enhance access to online groups and communities, which is especially beneficial for those with unique interests (Wright & Li, 2000). Bridging online, therefore, presents a plethora of opportunities for the user.

The reduction of nonverbal cues within an environment of enhanced social controllability develops a sense of disinhibition, which subsequently increases online



disclosure (Internet-Attribution-Perception Model; Schouten, Valkenburg & Peter, 2007). Disinhibition, or to “self-disclose or act out more frequently or intensely than [they would] in person” (p.321; Suler, 2004), can enhance success of online communication. Within offline settings disclosure may be limited due to social or cultural pressures (Gregerson, 2005). When disinhibited online, however, a user may feel more social freedom. This can develop further in terms of the Perception-Behaviour Intensification Effect (Jiang, Bazarova & Hancock, 2013). Essentially, due to the disinhibitory effect of the online environment, individuals’ perceptions and subsequent behaviours may become intensified.

Disinhibition can be beneficial for bonding social capital. Face-to-face, there are many logistics that can hinder communication. For example, lack of time and privacy may result in a lesser likelihood to share personal information, whereas online an individual has plenty of time and privacy options (e.g., sending a direct message). In fact, Mesch & Beker (2010) discovered that adults’ and adolescents’ offline disclosure behaviours were not correlated with online behaviours. Instead, privacy concerns were lessened and disclosure behaviours enhanced online. Mesch and Beker (2010) theorised that this was a result of disinhibition easing the communication process (Schouten, Valkenburg & Peter, 2007). Combined with research linking disclosure and bonding social capital, it is indeed reasonable to perceive SNS as beneficial (Bazarova, 2014; Kim & Kim, 2017; Ellison et al., 2007).

For the shy, or more socially restricted individual, disinhibition can be extremely useful in bridging social capital (Mazzoni & Iannone, 2014). Offline, the prospect of voicing certain opinions or initiating a new friendship can be extremely difficult. Online, disinhibition facilitates communication making bridging easier and more successful (Schouten, Valkenburg & Peter, 2007). Thus, SNS presents social options to those who may feel more limited offline.

Indeed, SNS presents many benefits for social capital management. Yet, these benefits are paralleled by risks.

Interpreting nonverbal cues during offline communication is important (Knapp, Hall, & Horgan, 2013; Nowicki & Duke, 1992). Where these cues are misinterpreted, undetected or inappropriately conducted, there can be adverse social outcomes (e.g., friendship difficulties; Nowicki & Duke, 1992; Parker & Asher, 1987). Communicative failures can have a huge impact on present and future social status, impacting future



relationships (Hoffman & DiBartolo, 2014). Reliance upon SNS may enhance these risks (Chak & Leung, 2004).

Particularly for those who struggle socially offline, but find offline communication more successful, increased reliance upon SNS can reduce the willingness to interact offline as well as the time available to do so (Harman et al., 2005; Kim & Haridakis, 2009). Prioritising online communication may result in poor offline social skills (Harman et al., 2005; Iskender & Akin, 2010). The likelihood of unsuccessful communication offline may in fact be enhanced as the required skills lack practice (Harman et al., 2005).

The culture of being constantly available to socialise can also be risky. Historically, the home resembled privacy and sanctuary from the rest of the world (Saunders, 1989). The ability to access and manage social capital at any time can penetrate the privacy of the home. A lack of separation between the home and elsewhere can result in problems becoming inescapable (Hinduja & Patchin, 2008). For example, offline friendship difficulties may transfer to online (see 2.1.3.). SNS use therefore enhances social risks that are fluid between the private and public spheres.

2.1.2 Impression management through self-presentation

The way in which we present the self is linked with self-concept and impression management. Our beliefs and values from our past and current selves, and our perceptions of the future self, define self-concept (Altheide, 2000; Goffman, 1978). Impression management can be used for differing goals, such as trialling out aspects of self-concept (Arkin et al., 1986) or manipulating others perceptions of the self. Successful self-presentation is often linked to presenting the self in a way that is consistent with social norms (i.e., thoughts, feelings and behaviours shared by a group; Turner, 1991). Achieving these goals is facilitated by self-presentation behaviours: the communicative means in which to manage impressions of the self (Gardner & Martinko, 1988; Goffman, 1959; 1978).

Online, self-presentation behaviours present within five facets: the real self; the ideal self; the false self to explore; the false self to compare/impress; the false self to deceive (Michikyan, Dennis, & Subrahmanyam, 2015). The real self requires no technique in its presentation. Rather, it is an extension of the offline self (Michikyan, Subrahmanyam, & Dennis, 2014). It is important to note that the real self is multi-layered and can adapt depending on social context (Banaji & Prentice, 1994). The ideal



self is a projection of whom the individual aspires to be (Havighurst, Robinson, & Dorr, 1946; Michikyan, Subrahmanyam, & Dennis, 2014). The false self to explore entails presenting an inauthentic self with the aim of exploration (Goby, 2006). The false self to compare/impress consists of presenting a misleading representation of the self that is shaped by social norms (Michikyan, Dennis, & Subrahmanyam, 2015; Subrahmanyam & Greenfield, 2008). The false self to deceive is where an alternative identity is presented with the specific intention of deception, often for antisocial goals (Michikyan, Dennis, & Subrahmanyam, 2015).

Utilising SNS to manage impressions can be advantageous. Offline, individuals may be socially restricted in how they present the real self (Schouten, Valkenberg & Peter, 2007). Online, however, an individual has far more freedom to present the self in a way more congruent with their self-concept (Michikyan, Dennis, & Subrahmanyam, 2015).

Impression management via SNS use can be beneficial in terms of presenting the ideal self. Where the goal is driven by self-concept, the user may present idealistic representations and evaluate feedback (Burrow & Rainone, 2017). Positive feedback may affirm self-concept (Bareket-Bojmel, Moran, & Shahar, 2016). Equally, negative feedback may encourage the user to reflect and reconstruct (Michikyan, Dennis & Subrahmanyam, 2014). Even with positive feedback, the user may decide that it is not a permanent side to the self and choose to reconstruct (Higgins, 1987; Michikyan, Dennis & Subrahmanyam, 2014). The ease of such experimentation is manageable online, whereas offline this would be far more difficult to achieve.

In terms of presenting the ideal self in line with social norms, SNS can be useful. Individuals may want to be perceived in particular ways depending on their social context (Christakis & Fowler, 2009; Van House, 2009). In fact, Van Dijck (2013) argues that all SNS self-presentation is shaped by perceptions of normative behaviour; for example, self-presentation techniques differ hugely between Facebook (social) and LinkedIn (professional). Presenting the ideal self can therefore be beneficial in managing impressions based within certain social contexts (Beer, 2009). Where feedback is positive an individual can reap social success; aspects of this self can then be evaluated and replicated in the future (Van House, 2009). Equally, where feedback is negative, the individual can easily reconstruct without feeling particularly hurt or embarrassed as the self does not represent self-concept (Paliszkievicz & Madra-Sawicka, 2016).



SNS also presents a useful platform for exploring the false selves. Managing impressions through the false self can be beneficial in trialling out aspects of self-concept that are not yet embedded (Selman, 1980). Experimenting with certain aspects of the self is not always possible face-to-face. Exploring gender is an example of this. In some communities, gender is considered synonymous with biological sex in which case gender exploration would be stigmatised. Online, however, an individual could explore gender through the false self, evaluate feedback and consider whether to embed within self-concept or not (Marciano, 2014). If feedback is negative, or the individual decides against this self, it can be easily abandoned with little repercussion (Michikyan, Dennis, & Subrahmanyam, 2015; Subrahmanyam & Šmahel, 2010).

Managing impressions with the purpose of eliciting a response encourages the performative self (Page, 2014). It doesn't necessarily relate to self-concept, but is shaped by the social norms of the environment, and often constitutes the false self (McLaughlin & Vitak, 2012). For example, online pranks within certain communities are considered a social norm. Examples of these including 'fraping' (anonymously altering another's SNS profile information without their permission; Moncur, Orzech & Neville, 2016), 'Rickrolling' (anonymously messaging someone a hyperlink with an urgent topic that actually takes them to a Rick Astley music video; Silvestri, 2014), fake reviews (Banerjee & Chua, 2014), and many more. These examples of presenting the false self, situated within social norms, can be very socially rewarding and unique to SNS use.

Indeed, SNS use presents a platform where impression management can be achieved via a variety of different self-presentation techniques. The ease and freedom of manipulating the online self, however, presents risks to the SNS user.

Presenting the ideal self online can be risky. Managing impressions based upon perceptions of the ideal can increase pressure for perfection (Dahiya, 2016). In relation to self-concept, an individual may have unrealistic or unreasonable expectations for the ideal self; manipulating the online self to reflect these may be problematic. If feedback is positive, the individual may consider the disparity between the real and ideal selves and embed negative perceptions within self-concept (Ellison, Heino, & Gibbs, 2006; Michikyan, Dennis, & Subrahmanyam, 2015; Siibak, 2009). Equally, if feedback is negative, the individual may feel that even at their best they are not good enough (Elliot, 1982; Michikyan, Dennis, & Subrahmanyam, 2015).



Extending the risk of perfection, Kelly, Keaten and Millette (2020) identified that those with greater fear of negative evaluation online had less friends; therefore, high social expectations of the ideal self may relate to social capital. Alternatively, an individual may decide to present the false self in order to mitigate this fear. Similar to the risks of presenting the ideal self, positive feedback may be disheartening as the online self is drastically different to the real self (Elliot, 1982; Michikyan, Dennis, & Subrahmanyam, 2015). Further, maintaining the false self may be time-consuming and stressful, particularly if an online contact who is known offline deciphers the user's true identity (Choi et al., 2015).

2.1.3 Cyberbullying

Engaging with SNS use can expose the user to cyberbullying: repeated intention to harm reflecting a power imbalance (Hinduja & Patchin, 2008; Olweus, 1994; Smith et al., 2008). Much literature, however, has hotly debated how cyberbullying should be defined (Englander et al., 2017; Peter & Petermann, 2018). Tokunaga's (2010) definition of cyberbullying builds upon the aforementioned components by appropriately embedding them within an online context.

Much research has identified that those who report experiences of traditional victimisation, also report experiences of cybervictimisation (Olweus, 2012; Salmivalli & Pöyhönen, 2012; Smith et al., 2008; Waasdorp & Bradshaw, 2015). Similarly, those who engage in traditional bullying also engage in cyberbullying (Kowalski & Limber, 2013; Perren & Gutzwiller-Helfenfinger, 2012; Smith et al., 2008). Plus, traditional bullies can become cybervictims, and vice versa; bully-victims: bullies' offline power may become powerless online, this results in traditional victims seizing their opportunity to become powerful (Kowalski & Limber, 2013; Ybarra & Mitchell, 2004).

The use of SNS may enhance the risks of cyberbullying. As aforementioned, online disclosure is facilitated by disinhibition and the perception-behaviour intensification effect (Jiang, Bazarova & Hancock, 2013; Schouten, Valkenburg & Peter, 2007). These can encourage both cybervictimisation and cyberperpetration.

Online over-disclosure can increase visibility to cyberbullies (Heirman & Walrave, 2008; Slonje, Smith & Frisé, 2013). In terms of social capital, an individual may wish to share personal information with the goal of bonding (strengthening pre-existing relationships; Ellison, Steinfield & Lampe, 2007; Putnam, 1993; Patulny & Svendsen, 2007). Bazarova (2012) identified that online audiences make strict



judgements based upon the appropriateness of disclosed information, in which case, misjudging the audience can increase the risk of being cybervictimised (Bryce & Klang, 2009; Schachter, Greenberg & Juvonen, 2016; Valkenburg & Peter, 2011). Even if an individual chooses to bond privately (e.g., via a direct message) they may be influenced by the perception-behaviour-intensification effect and over-disclose in a way unsupported by the recipient (e.g., voicing differing opinions; Gagliardone, 2019). If unresolved, this could lead to cybervictimisation. When attempting to bridge social capital (form new relationships; Putnam, 1993; Patalny & Svendsen, 2007) a case of over-disclosure is even more likely to result in cybervictimisation as the cyberbully may feel distant from their victim and less fearful of potential repercussions (Golf-Papez & Veer, 2017; Schouten, Valkenburg & Peter, 2007; Sest & March, 2017).

Unsuccessful impression management can also increase visibility to cyberbullies (Dredge, Gleeson & De la Piedad Garcia, 2014). Contacts who know the true identity of an individual presenting the ideal or false selves may notice the inauthenticity and target them (Kernaghan & Elwood, 2013; Walrave & Heirman, 2010; Weber, Ziegele & Schnauber, 2013; Valkenburg & Peter, 2011).

Equally, presenting the false selves enhances the likelihood to cyberbully (Jiang, Bazarova & Hancock, 2013). Particularly where an individual is presenting the performative self, they may intensify their online behaviour for social goals, protected by anonymity (Page, 2004). For the cybervictim who is utilising self-presentational techniques based upon self-concept, the association with cybervictimisation could be detrimental (Campbell, 2005; Brewer & Kerslake, 2015; see 2.1.4.).

To date, research has identified that SNS use provides many benefits but, in parallel, many risks to the user. It is crucial to note that our current understanding of these risks and benefits is founded predominantly upon findings from adult samples. More recently, findings have emerged from adolescent samples, although still limited. Despite the fact that we know younger children are accessing SNS, research examining the risks and benefits remains scarce.

2.1.4 Mental health and wellbeing

Hotly debated within the media, many have considered the ways in which constant connectivity, rapid communication and easier self-expression have shaped the psychological and emotional climate of the digital age (O'Reilly et al., 2018; Renn & Benighaus, 2012).



Galderisi et al. (2017) define mental health as incorporating a range of emotions (both positive and negative) as well as the ability to empathise with others (Compas, 1998; Coffey, Hartman & Fredrickson, 2010; Larsen et al., 2003; Spielberger & Reheiser, 2009). Unlike mental health, which is predominantly functional on an individual basis, wellbeing is more socially constructed and fluid (Ferguson et al., 2010; Manwell et al., 2015). Wellbeing can be subdivided into specific categories which address areas of life individually, such as social wellbeing and financial wellbeing (Rath & Harter, 2010). When combined, these categories unite to formulate a sense of satisfaction with life (Cummins, 1995; Dodge et al., 2012; Seligman, 2002). Life satisfaction is entwined with one's sense of self (Ryff & Singer, 2008). The way in which we perceive the self and subsequently shape our expectations and goals impacts how satisfied we feel with our life (Lafrenière, Vallerand & Sedikides, 2013).

Of course, mental health and wellbeing are linked; an individual with poor mental health will likely experience low wellbeing more frequently, and vice versa (Kearns et al., 2015; Van Lente et al., 2012; Welsh & Berry, 2009). Importantly, however, low wellbeing can lead to poor mental health despite a lack of pre-existing or genetic mental health illnesses (Patalay & Fitzsimons, 2018; Van Lente et al., 2012). Thus, even if an individual has had no previous experiences of poor mental health, or mental illness, they may still experience low wellbeing and subsequent mental health difficulties (Prince et al., 2007; Van Lente et al., 2012).

The Good Childhood Report (2018) identified that almost half of children (47%) with low wellbeing experienced depressive symptoms. Across primary and secondary schools, 10% of children are currently receiving mental health diagnoses (McGinnity et al., 2005; Public Health England, 2014). These mental health difficulties often translate into adulthood, with 75% of adults who experience mental health disorders reporting onset before the end of adolescence (Kessler et al., 2005). Concerns regarding children's wellbeing and mental health are strengthening. Between 2010 and 2016, a significant decrease in children's (aged 10-15 years) life satisfaction was identified (Good Childhood Report, 2018). Across five to nineteen-year-olds, a rise in emotional disorders (predominantly anxiety and depression) is evident between 2004 (1 in 10) and 2017 (1 in 8; Mental Health Foundation, 2018).

It has been argued that SNS is contributing to mental health and wellbeing difficulties. Amongst children and adolescents aged 10-to-18 years, it has been argued that increased time spent using SNS significantly reduces overall life satisfaction



(Twigg, Duncan & Weich, 2020), enhances anxiety and depression (O'Reilly et al., 2018; Vanucci & McCauley Ohannessian, 2019) and addiction (Dhir et al., 2018). These findings are problematic. Firstly, children under 10 are not included in most studies. By excluding the younger age range of the iGen, we cannot be certain whether these outcomes are applicable to them. In fact, many studies that have included under 13s predominantly consist of secondary data analyses of datasets collected around the creation of SNS; questions therefore relate to the very first SNS, such as MySpace, Bebo and Piczo (Twigg, Duncan & Weich, 2020). These SNS are either no longer in existence or unpopular with the iGen who favour Instagram and SnapChat. As well as the problematic sample age range, a focus is placed upon the time spent online rather than the specific behaviours. We know that SNS use can vary in terms of active (posting; commenting; liking) and passive (scrolling with no traceable activity) behaviours (Coyne et al., 2020). The way in which users behave online is more impactful upon the outcomes than just the time spent (Coyne et al., 2020). Thus, we cannot know for sure which aspects of SNS use are in fact directly relating to the iGen's mental health and wellbeing outcomes.

On the other hand, rather than contributing to children's mental health and wellbeing difficulties, SNS may in fact be beneficial. Within a systematic review conducted by Best, Manktelow and Taylor (2014), beneficial outcomes were identified regarding adolescent SNS use. In particular, greater SNS use (both time spent and active behaviours) were associated with enhanced self-esteem and perceived social support due to social capital, self-disclosure and self-expression opportunities online. Albeit, this study included all participants under 19 and thus we cannot ascertain whether these findings relate to the iGen. Simply, we do not know enough about the iGen's SNS behaviours and to what extent these relate to their mental health and wellbeing outcomes.

In order to build an understanding of how the SNS risks and benefits may relate to the iGen's mental health and wellbeing, we can evaluate current findings and consider their applicability to the iGen. For example, during childhood, developing quality friendships becomes increasingly important and is associated with self-esteem and confidence (Cillessen & Bellmore, 2004; Erwin, 2013; Glick & Rose, 2013; Rubin & Ross, 2012). Being able to independently manage and strengthen friendships can enhance feelings of connectedness and belonging, benefitting wellbeing, especially satisfaction with life (Ahn, 2011; Davis, 2012; Merchant, 2011; Quinn & Oldmeadow,



2013; Valenzuela, Park & Kee, 2009; Wang et al., 2014; Wellman et al., 2010; Zhao et al., 2012). It is therefore appropriate to consider how the management of social capital via SNS may be associated with children's friendships and subsequently their mental health and wellbeing.

Bonding social capital via SNS may strengthen quality friendships, whilst bridging may enhance feelings of belonging and connectedness (Ellison, Steinfield & Lampe, 2008; Quinn & Oldmeadow, 2012). In particular, those with low self-esteem and wellbeing have been identified as reaping these benefits more so than others (Ellison, Steinfield & Lampe, 2007). Considering we know that low wellbeing is associated with poor mental health (Keyes & Waterman, 2003; Stedman, 1996), SNS use may provide a beneficial mitigator for this.

The ability to craft and curate various versions of the self via SNS can increase confidence (Amichai-Hamburger, 2007; Leary, 2017; Leary & MacDonald, 2003). Receiving feedback can be beneficial upon mental health, particularly where the individual feels satisfied with the self (Best, Manktelow & Taylor, 2014; Jackson & Luchner, 2018; Schneider, 1969; Yang & Brown, 2015). Feeling self-confident is impactful upon positive outlooks and interactions with others, influencing belonging, connectedness and engagement in social opportunities (Ahn, 2011; Amichai-Hamburger, 2007; Barblett & Maloney, 2010; Lambert et al., 2013; Marshall, 2002). Where an individual feels confident in the self, they are able to cope with the fluidity of wellbeing and the challenges that life may present them (Mann et al., 2004; Thoits, 2012; Watson & Emery, 2012). This contributes to good mental health and can provide children with a foundation for long-term positive wellbeing (Best, Manktelow & Taylor, 2014).

Yet, there are also many risks upon mental health and wellbeing. Friendship difficulties via SNS use are particularly risky as children are unable to escape upon returning home (Patchin & Hinduja, 2006; Price & Dagleish, 2010). Children may therefore experience loneliness and sadness both at school and home (Beran & Li, 2005, 2008; Brewer & Kerslake, 2015; Hoff & Mitchell, 2009; Sahin, 2012). If these difficulties continue over time, or are left unresolved, a child's mental health may suffer. Prolonged loneliness or unhappiness can impair self-esteem, confidence and willingness to socialise, impacting wellbeing (Brewer & Kerslake, 2015; Kong & You, 2011; Lim et al., 2016; Mijuskovic, 1986; Sletta et al., 1996). Low wellbeing can predict anxiety and depression, which may become life-long mental health challenges



(Asher, Hymel & Renshaw, 1984; Crick & Ladd, 1993; Heinrich & Gullone, 2006; Mijuskovic, 1986; Schinka, VanDulmen, Bossarte & Swahn, 2012).

The risks associated with impression management online may also be associated with mental health and wellbeing. Identifying a disparity between the online and real selves is negatively related to self-esteem and self-concept (Michikyan, Dennis & Subrahmanyam, 2014). Where this negative sense of self becomes embedded, an individual may feel less satisfied with life and be at risk of suffering from depression (Wright, White & Obst, 2018). Further, where an individual presents the online self performatively but receives undesirable feedback, anxiety or depression may enhance (Wolniewicz et al., 2018); Michikyan, Dennis & Subrahmanyam, 2014). In particular, if an individual becomes reliant upon their online self, they may become increasingly fearful of negative evaluation, this can develop into anxiety (Casale et al., 2014; Wolniewicz et al., 2018).

Experiences of cyberbullying present a further risk to mental health and wellbeing. Cybervictims often report sadness and anger (Camodeca & Goossens, 2005; Fahy et al., 2016; Guo, 2016; Pabian & Vandebosch, 2016), which have previously been associated with daily impairments such as an inability to complete schoolwork or socially engage with friends (Beran & Li, 2008; Cowie, 2013; Navarro et al., 2015). Increased anxiety and depression are widely reported as mental health outcomes from cybervictimisation (Campbell et al., 2012; Fahy et al., 2016; Reed et al., 2016). Further, adverse mental health and wellbeing outcomes may also result from cyberbullying or being a bully-victim. Cyberbullies can experience low coping and increased anger, as well as anxiety and depression (Campbell et al., 2013). Bully-victims are particularly likely to experience these negative outcomes (Kokkinos, Antoniadou & Markos, 2014).

We know that early onset of poor mental health predicts long-term mental health challenges into adulthood (Sonuga-Barke et al., 2017). Considering the relationship between SNS use, mental health and wellbeing is extremely important for the iGen. Developing in a digital age makes the iGen unique in their life experience and with the research discussed here consisting of adult and adolescent samples, it may not be applicable. Developing a more nuanced understanding of the iGen's mental health outcomes is paramount in determining to what extent SNS may play a role.



3. Importance of this thesis

To summarise this thesis thus far, SNS use has become a popular tool for actively participating within the digital age, this provides users with many benefits but also many risks. We know that Gen Z and the iGen are using SNS. We also know that the iGen, in particular, are unique in their experience of the digital age, having been immersed in it since birth. Research to date has prioritised Gen Z; an understanding of how the iGen are engaging online and to what extent they are experiencing the risks and benefits is limited. Further, literature identifies that SNS use may be associated with mental health and wellbeing. Again, relating this specifically to the iGen remains limited. We need to explore the relationship between the iGen's SNS use and mental health and wellbeing in order to understand how immersion in the digital age may shape development.

In its entirety, this thesis is important as it considers both Gen Z and the iGen as active participants within the digital age. In an adultist society, concerned about the corruption of childhood, protection is prioritised as opposed to equalised with provision and participation. Exploring SNS use from the perception of Gen Z and the iGen will help adults to also consider provision in order to empower children's active participation within the digital age.

Importantly, children aged 7-to-12 years will be prioritised within this research. Adolescents, aged 13-to-18 years, will participate within the first study to consider the uniqueness of the iGen before focusing upon children. This is vital for ensuring that the findings reflect the realities of the iGen's SNS use. Adults will be considered in terms of how their internet mediation behaviours may be associated with children's SNS use. Fostering a nuanced understanding of the iGen's SNS use will be strengthened via this thesis' mixed methods approach. Specifically, this will be achieved via four studies:

1. The first study will consist of an exploratory investigation into adolescent SNS risk concern and how this influences perceptions of the benefits.
2. The second study will focus upon children's (aged 7-to-12 years) behaviours relating to the risks and benefits of SNS use. This study will include the theoretical notions of self-disclosure, social capital, self-presentation and cyberbullying. These findings will develop an understanding of children's SNS behaviours and how these are associated with risky and beneficial outcomes.



3. The third study will consist of a qualitative investigation into children's and adults' engagement with SNS, and their risk and benefit perception. Children, parents and teachers will participate within one-to-one interviews to provide a greater insight into the risks, benefits and mediating role of adults within children's SNS use. This study will also provide a sociological angle to the findings by developing an understanding of social and cultural contexts.
4. The fourth and final study will consist of a longitudinal investigation exploring children's SNS behaviours and the potential relationship with mental health and wellbeing. This study will assist in establishing how directly SNS may be responsible for mental health and wellbeing outcomes over time.

This thesis will present a collection of timely and important findings that will assist in developing the appropriate support for the iGen within the digital age. This thesis aims to develop a comprehensive understanding of how the iGen are engaging with SNS, what their perceptions of the risks and benefits are, how adults' internet mediation behaviours may shape children's SNS use, and how this may ultimately be associated mental health and wellbeing. Within an age where digital technology is increasingly important, a full understanding of how the iGen are using SNS is required in order to both protect and empower their contribution to the digital age.



Chapter 2

Methods - Addressing the research aim

Despite assumptions that children under the average age restriction of 13 years are not accessing social networking sites (SNS), we know that this is not the case (Ofcom, 2019). Yet, research considering SNS use, online behaviours, perceptions, access to the risks and benefits, and associations with mental health and wellbeing predominantly consist of adult and adolescent samples. Exploring how children are engaging with SNS, as well as how this may shape their social and emotional development, is crucial in understanding how the iGeneration (iGen; Rosen, 2010) are developing within a digital age. To achieve this, I have taken an interdisciplinary approach integrating psychological and sociological frameworks. Combining qualitative and quantitative methodologies (i.e., a mixed methods approach) aims to reap richer data by accessing more nuanced information (Johnson et al., 2007; Rossman & Wilson, 1985).

Both children (aged 7-to-12 years) and adolescents (aged 13-to-18 years) will participate within this thesis' methodology. Adolescence is a unique developmental stage beginning at the onset of puberty (averaging age 13 years; Sawyer et al., 2018) and ending at the transition to social and financial independence (Blakemore, 2008). Adults typically perceive adolescents to be more competent than children and therefore allow them greater social autonomy (Corsaro, 2015; James & Prout, 2015). In fact, we see that adolescents are provided with far greater digital autonomy than children (Shifflet-Chila et al., 2016; Ofcom, 2019). In the U.K., pupils at secondary school are aged 11-18 years and pupils within the juniors at primary school are aged 7-11 years; the educational framework of primary and secondary schools differs hugely. In particular, Shipton (2011) and Atkinson, Furnell and Phippen (2009) have identified that e-safety education varies widely across schools and that children aged below 13 years receive far less instruction around SNS use than older pupils. Within the methodology of this thesis, I have therefore chosen to group adolescents aged 13 years and above and children aged below 13 years. Justification for these age groupings is embedded within the developmental and theoretical differences between childhood and adolescence, the differences between primary and secondary education contexts, as well as the average SNS age restriction comprising 13 years.



Amalgamating psychological and sociological theoretical frameworks, this thesis will explore children's SNS use via a mixed methods approach. For instance, Chapters 3 and 4 comprise quantitative cross-sectional online surveys which explore adolescents' (aged 13-to-18 years) SNS perceptions and children's (aged 7-to-12 years) SNS behaviours. We know that adolescents use SNS, so this will provide an understanding of how they perceive their online behaviours. Children, on the other hand, technically should not be using SNS and so an outline of if and how they are using SNS is important. Together, these chapters provide a comparable overview of adolescents' and children's SNS use. Following this, Chapter 5 explores children's (aged 7-to-12) perceptions of SNS use in greater depth. Further, as we know that children's lives are shaped by adults' internet mediation behaviours, we also explore parents' and teachers' SNS perceptions and internet mediation behaviours. Importantly, this is conducted via qualitative one-to-one interviews, in order to gather nuanced data which accurately reflects children's reality and contextualises findings from Chapter 4. Lastly, a quantitative longitudinal online survey is incorporated within Chapter 6 to investigate the association between children's SNS behaviours and their mental health and wellbeing over time. Collectively, this mixed methods approach allows for a broader understanding of the nuances of children's SNS use and how it is shaped by their reality. In accordance with the United Nations Rights of the Child Charter (UNRC; Livingstone & Third, 2017; Scott, 2000), I will prioritise children's reality within the methodology of this thesis (Livingstone, 2016; Scott, 2000).

1. Study One: Assessing adolescents' SNS perceptions

The first study of this thesis considers the uniqueness of children (aged 7-to-12), by exploring SNS perceptions of adolescents (aged 13-to-18). In order to explore adolescents' concern for the risks of SNS use, an adapted version of an online risk concern scale is included within this survey. Importantly, concern is measured as we know that risk concern predicts perceptions of both risks and benefits (Roger, 1976, 1985; Wildavsky & Drake, 1990). Further, Youn (2009) found that adolescents with high concern for online risks were less likely to disclose online; we know that disclosure is required in order to access the benefits (Ellison et al., 2011). Thus, risk concern may potentially shape perception of the benefits.

Buchanan et al.'s (2007) risk concern scale was specific to online use. Items were constructed with a theoretical perspective of privacy and self-disclosure. This



presents a useful foundation for measuring risk concern with this study as these types of concerns have been found to predict perceptions of online benefits (Chen, Beaudoin & Hong, 2017; Proudfoot et al., 2018). However, for the purpose of my work the scale required adapting to be specific to SNS risk concerns.

Firstly, phrasing required adapting in order to apply to this thesis' research aim of SNS use. Key words such as 'internet' were replaced with 'SNS'; for example, 'how concerned are you about your privacy while on the internet?' was rephrased to 'how concerned are you about your privacy whilst on SNS?'. The distinction between these key terms is important. Andrade, Kaltcheva and Weitz (2002) found that familiarity with a website as well as the reputation of the website influenced risk concern. Further, different types of websites have been found to predict differing levels of risk concern (Aboobucker & Bao, 2018); for example, an unknown retail website predicted higher risk concern than a popular retail website (Miyakasi & Fernandez, 2001). With this in mind, it was important to specify SNS use within this scale to ensure risk concern was directly related to SNS use.

Secondly, terminology was updated to refer to the functions of SNS. For example, 'are you concerned about emails not being from who they say they are?' was adapted to 'are you concerned about direct messages not being from who they say they are?'. The functions of SNS differ in terminology, but also in their theoretical association with risk concern. For example, a direct message and a post present different risks (Agosto & Abbas, 2017; Bazarova, 2016). A direct message (depending on privacy settings) may only be receivable from existing contacts, this would likely predict less risk concern. Alternatively, a post can be broadcast (shared with anyone online), posted publicly (shared with everyone within a user's online network) or privately (shared with either one or a select few contacts; Venkatanathan et al., 2014). Where the post is viewable by a large audience, this is likely to induce higher risk concern. In response to this, items within this scale were adapted to account for a range of SNS functions.

Thirdly, extending from adaptations regarding SNS functions, new items were constructed in order to explore broader notions relating to concerns of SNS risks. For example, 'are you concerned about how other people may perceive you as a person based upon your online profile(s)?' was added to explore impression management concerns. Adding these items was important in ensuring scores theoretically captured a breadth of factors which predicts SNS risk concern.



Following all adaptations, the scale was tested for internal reliability. The same process used by Buchanan et al. (2007) was replicated in order to minimise divergence of the new scale from the original scale; as recommended within scale adaptation literature (Hinkin, 2005; Worthington & Whittaker, 2006). This comprised an initial principle component analysis which identified all items as loading onto one factor; the scree plot also presented this factor obtaining an eigenvalue of 3. The KMO was .88; above the recommendation of 0.6 and close to 1 presenting good sampling quality. Bartlett's findings were significant ($\chi^2(105) = 2372.295, p < .001$) outlining that items correlated within the correlation matrix and therefore the scale was appropriate. This proposed that, in alignment with Buchanan et al.'s (2007) original scale, all items measured the same theoretical construct of risk concern. Additionally, a Cronbach's alpha was calculated presenting high internal reliability ($\alpha = .88$). From this, it can be surmised that these items theoretically capture SNS risk concern. The full scale can be found in Appendix A.

1.1 Perceptions of the benefits

As aforementioned, research to date rarely considers the benefits of adolescents' SNS use. That which does is predominantly qualitative: literature reviews (Uhls, Ellison & Subrahmanyam, 2017) and focus groups (Moreno et al., 2009). Crucially, the benefits are only considered alongside the risks. As a result of this, a validated measure of the SNS benefits alone could not be sourced. Therefore, a measure was devised for this study to explore adolescents' perceptions of the benefits of SNS use.

Items were created in response to notions of the benefits within current literature: 1) social capital, 2) impression management, 3) self-esteem. Social capital benefits were developed relating to both bonding (e.g., 'maintaining friendships') and bridging (e.g., 'joining groups related to your hobbies and interests') as these capture the benefits of expanding one's social network (Bargh, McKenna, & Fitzsimmons, 2002; Ellison, Steinfield, & Lampe, 2007). Impression management items (e.g., 'expressing your personality') were included as we know that SNS use provides a platform for identity curation (Michikyan, Subrahmanyam & Dennis, 2014) and impressions of others develops in importance during adolescence (Blakemore, 2012). Items relating to self-esteem (e.g., 'how you feel about yourself based upon your posts') were included as increased self-esteem may be considered a benefit (Best, Manktelow & Taylor, 2014; Burrow & Rainone, 2017).



In order to mitigate the risk of priming participants to rate all items as beneficial (skewing the data and distribution), seven filler items about SNS use in general (e.g., ‘learning how to upload media’) were also included. These items present fairly ambivalent benefits of SNS use and thus are likely to be rated as such. Within previous research, including filler items is recognised as a useful technique for avoiding the skewing of data (Kumar, Lebo & Gallagher, 1991).

As well as the use of filler items, the response design was devised in a fashion to encourage a reliable distribution of data. Using a likert scale would be problematic as it would indicate perceptions of benefits too clearly. Instead, I used a drag-and-drop function as this method has previously been found to encourage a broader range of responses (Blasius, 2012; Roster, Lucianetti & Albaum, 2015).

To test this scale’s validity, aesthetic design and scoring method, it was piloted with a small group of adolescents ($N = 6$; aged 16-18 years). Following completion of the scale, these participants engaged in a discussion with the lead researcher where feedback was provided; this feedback was then used to improve the scale. Predominantly, feedback concerned the aesthetic design of the scale, which was subsequently slightly adapted.

Following the main study’s data collection, an exploratory factor analysis was conducted to identify how perceptions of the benefits loaded. The KMO was .78; above the recommendation of 0.6 and close to 1 presenting good sampling quality. Bartlett’s findings were significant ($\chi^2(210) = 1355.091, p < .001$) outlining that items correlated within the correlation matrix and therefore the scale was appropriate. Interestingly, the loadings highlight that adolescents perceive the benefits of SNS use theoretically differently to adults. Factors included: 1) social capital ($\alpha = .827$), 2), disclosure to family ($\alpha = .780$) and 3) social comparison ($\alpha = .761$); all presenting high internal reliability. The full scale can be found in Appendix C.

1.2 Sample size

In order to determine high statistical power, a power analysis was conducted to establish the required sample size; this was completed using the pwr package in R (Champely, 2020). The UK population of pupils in secondary education in 2018 totalled 3,258,451 (DofE, 2018) and so this figure was included within calculations. With a confidence level of 90% and a margin of error between 5-7%, a range between 139-273 participants were required for a powered sample. Following data collection,



the margin of error was calculated using the sampler package in R (Lohr, 1999). A margin of error of 7% was identified for a small to medium effect (.05-.08) and thus 139 participants were required within analyses.

Study Two: Assessing children's SNS behaviours

Following the prioritisation of adolescents' SNS perceptions within Study One, Study Two focuses upon the main research question of this thesis: the iGeneration. Study One's methodology highlights perceptions of benefits, in particular, with relation to risk concern. Importantly, adolescents from 13 years use SNS and they are less restricted in doing so due to being legally allowed to use them (Allen et al., 2014); this is where researchers have focused and methodologies have been established. However, my interests in this thesis is to understand SNS use of 7- to 12-year-olds and the implications of this. This has meant that I have adapted measures, which I outline below, to be suitable for this age group.

1.3 Risk and benefits

In order to gather valid, meaningful data from our participants, it is important to consider children's reading ability and comprehension. Primary-aged children have only been able to read for a few years and will still rely on phonetically decoding words rather than sight reading (Brown & Felton, 1990; Lenchner, Gerber & Routh, 1990); this is impactful upon designing measures. Firstly, there are certain words that, depending on the sample age range, children will simply be unable to read (Deacon & Francis, 2017; Price-Mohr & Price, 2020). Carlisle and Kearns (2017) present morphologically complex words (e.g., 'resourcefulness', 'discouraged', 'carefully') as especially difficult to learn to read with most children only being able to read and comprehend them during adolescence. Based upon these considerations, it is appropriate to adapt pre-validated scales.

I have followed the Aydin et al. (2016) strategy for making scale adaptations for children, whilst avoiding reducing internal reliability; the 'simplification and moderation' stage consists of adapting language appropriately for children, as well as the scale presentation, followed by being reviewed by a panel of experts. All items in the original scales included within this study were screened for age appropriateness and adapted where necessary. For example, in the Bonding and Maintained Social Capital Scales (Ellison, Steinfield & Lampe, 2007), the item 'I have used Facebook to check



out someone I met socially’ required adapting as the word ‘socially’ is morphologically complex and difficult to phonetically decode. Further, the term ‘check out’ is an American colloquialism and could therefore present a challenge for children’s comprehension. To mitigate these, this item was adapted to ‘I have used [name of SNS] to find someone I met in person’. In line with Aydin et al.’s (2016) recommendations for a reviewer panel, multiple rounds of item adaptations were conducted with all supervisors of this thesis providing feedback, as well as a linguistic specialist and an eight-year-old child (known to the researcher) providing additional feedback. In terms of scale presentation, visual cues (such as emojis) were incorporated as well as coloured texts, as we know that visual stimulation such as this is beneficial for children’s reading and comprehension (Hitch & Halliday, 1988; Nardini, Bedford & Mareschal, 2010). Please see Appendices D, E, F, G and H for the original and revised scales.

Additionally, in line with good practice (Aydin et al., 2016) the first complete version of this online survey (including all adapted scales) was piloted with a group of 20 children aged 7-to-11 years ranging in academic ability. Children’s survey completion time was recorded and their responses were analysed for outliers (Gardiner et al., 2019; Hazzi & Maldaon, 2015; Williams, 2006). To test that internal reliability had not drastically decreased, Cronbach’s alpha was calculated for each of the scales following the pilot. Self-disclosure ($\alpha = .81$), bonding social capital ($\alpha = .90$), bridging social capital ($\alpha = .91$), self-presentation ($\alpha = .95$), cyberbullying perpetration ($\alpha = .94$) and cyberbullying victimisation ($\alpha = .81$) all presented high internal reliability. Except for Rosenberg’s (1965) Self-Esteem Scale, which presented poor internal reliability ($\alpha = .46$). Items within the self-esteem scale were adjusted to relate more closely to the original scale items; see Appendix F for an example. Following completion of the survey, a focus group was held with the children ($N = 20$; aged 7-to-12) to provide verbal feedback. All remaining adjustments to the survey were conducted based upon this feedback ensuring appropriateness of the measures for children.

To support children in responding about SNS use items were broken down so that children could differentiate between their use of multiple SNS. For example, a child may use Facebook to present the real self but then use Instagram to present the ideal self; we see this variance in online behaviours within adolescent and adult SNS use (Aksoy et al., 2013; Boulianne, 2015) and so it is important to explore this within children’s online behaviours. However, in response to the cyberbullying perpetration and victimisation scales, items were not broken down due to ethical reasons; asking



children to outline details about these experiences could be distressing. In particular, I asked children about their use of Facebook, Instagram and SnapChat, as these are the most popular SNS worldwide (Statistica, 2019).

1.4 Sample size

In order to determine high statistical power, a power analysis was conducted to establish the required sample size; this was completed using the *pwr* package in R (Champely, 2020). The UK population of pupils in primary education in 2019 totalled 4,272,090 (DofE, 2019) and so this figure was included within calculations. With a confidence level of 90% and a margin of error between 5-7%, a range between 139-273 participants were required for a powered sample. Following data collection, the margin of error was calculated using the *sampler* package in R (Lohr, 1999). A margin of error of 5% for a small to medium effect (.05-.08) was identified and thus 273 participants were required within analyses.

2. Study three: Investigating children's, parents' and teacher's SNS perceptions

Investigating how the iGen access SNS, how they behave online, and how this predicts the risky and beneficial outcomes is effective in understanding the foundation of children's SNS use. Yet, to conceptualise children's behaviours, we require consideration of children's reality (Scott, 2000). Current literature conceptualises SNS use within an adult reality. The risks and benefits, in particular, are based upon adult perceptions (Livingstone & Third, 2017). In terms of research methodologies, this presents two problems. Firstly, adults impose their reality upon children's SNS use. Having grown up in a digital world, the iGen's reality differs to adults' (Rosen, 2010). Projecting adult perceptions upon the iGen is therefore meaningless as it fails to acknowledge what children are actually experiencing (Macdougall & Darbyshire, 2017). Secondly, failing to explore children's reality renders information about them as fragmented (Livingstone & Third, 2017). Knowing what a child does but not knowing why lacks meaning (Mauthner, 1997).

To ensure the findings of Study Two are meaningful and that their interpretation accurately reflects children's reality, Study Three will explore children's perceptions of SNS use. Additionally, to understand to what extent children's SNS use is shaped by adult reality, adults' SNS perceptions will also be explored.



2.1 Interviews

The use of interviews within this study, as opposed to other qualitative methods (e.g., focus groups, observations) is important due to the requirement for objectivism (Silverman, 1998). Firstly, the lead researcher must maintain an objective status throughout to avoid imposing their reality upon the participant (Waller, Farquharson & Waller, 2015). This is manageable via an interview as the participant can lead the flow of the conversation, whereas other methods would require more input from the researcher, which could limit objectivism (Gill & Baillie, 2018; Silverman, 1998). Importantly, conducting interviews provides an opportunity for children to express themselves using their own words (Kortesluoma, Hentinen & Nikkonen, 2003). Secondly, the topic of SNS use, especially regarding younger children, is shrouded in social stigma due to the age restrictions (Livingstone, 2017). Other qualitative methods, such as a focus group, would therefore be inappropriate as social stigma from other participants could limit responses (Grimm, 2010). To ensure objectivism and meaningful data, interviews are a suitable choice for addressing this study's aim.

As well as this, a semi-structured design will be implemented. Carruthers (1990) argues that interview structure must be selected based upon the nature of the research question and depth of data sought. In relation to this study, objectivism is required but also depth of information concerning notions within the literature (i.e., self-disclosure, self-presentation, etc). Bogdan and Biklen (1982) recommend the use of a semi-structured approach to gather nuanced data whilst maintaining objectivism. Furthermore, a semi-structured approach is justified within this study, due to the young age range of participants. Expecting children to describe their perceptions and contextualise these within their reality would be unreasonable. We know that children process abstract thoughts and experiences with greater difficulty than adults (Vygotsky, 1994). Therefore, to ensure children's rights to provision and participation, as well as the emergence of meaningful data, a semi-structured design is appropriate for this study.

de Wet and Erasmus (2005) propose the flow of questions as important in ensuring academic rigor. Deatrack and Faux (1991) suggest the use of flow charts as an interview guide; these allow a systematic flow between questions avoiding any fragmentation. Flow charts are therefore used within the interviews of this study. These are useful for the research question as affordances can be made with regards to the



notion of SNS use. For example, if a participant does not use SNS, a particular flow of questions will be used which still prioritise the research question whilst ensuring applicability to the participant (see Appendix J, K and L).

Following the design of the interview questions, each interview will be piloted in line with good practice (e.g., see Folque, 2010; O'Reilly and Dogra, 2016) For this pilot, one child, parent and teacher will be interviewed within a safe, private space. Upon completion of the interview, they will be invited to provide any feedback regarding question clarity, pace, etc. These comments will inform any rephrasing or item adjustments required (particularly for the children's interview). Questionnaires, following these edits, will then be administered during the main data collection period.

2.1.1 Children

Questions within the children's interviews comprise three sections: 1) general SNS use, 2) risk and benefit perceptions in general and 3) risk and benefit perceptions based upon the literature. To establish the child's access to SNS, they are first asked about whether they own an SNS profile. Where a child states that they do not, they will then be asked whether any family members or friends use SNS. If they state no access whatsoever, children will then be asked to explain which SNS they know of. Establishing this immediately is vital in contextualising the digital immersion of the child's life as we know that SNS use shapes perceptions (Livingstone, 2017).

To avoid priming children about the risks and benefits discussed within current literature, children are asked about the risks and benefits of SNS use in general. Importantly, the researcher must seek nuanced information whilst remaining objective (Silverman, 1998). By providing children with this open question it allows the emergence of their digital reality and limits the risk of the researcher imposing their own reality upon them (Baumbusch, 2010). Following this, in order to explore the relatedness between children's SNS perceptions and those within the literature, children are invited to respond to vignettes. Specifically, these vignettes are based upon notions of self-disclosure, self-presentation, social capital, cyberbullying and self-esteem.

Barter and Renold (2000) emphasise the usefulness of vignettes in qualitative research, especially when exploring children's experiences within social constructs. Vignettes comprise a short narrative depicting an ambiguous scenario; participants are invited to comment on this or answer specific questions. Barter and Renold (2000) stress that the more ambiguous the better. Equally, West (1982, as cited in Finch, 1987) argues that the broader the questions the better, especially with younger participants.



Vignettes can assist in targeting abstract concepts which may be deeply embedded in social context, encouraging the participant to express beliefs otherwise complex to unravel (Finch, 1987). When we consider the differences that already exist between adult and child realities, a vignette can be helpful in bridging these by presenting an element of adult reality which a child can then contextualise in their own reality (Barter & Renold, 2000). When we consider the differences in reality between the iGen and adults, this process may be particularly insightful.

When constructing these vignettes, I considered the current known risks and benefits within the literature. Importantly, although embedded within theoretical notions, I ensured that each vignette was contextualised within children's reality (Barter & Renold, 1999). To achieve this, I incorporated familiarities such as environments that were relevant to children (e.g., school: '...to keep in touch with old friends from primary school'). Also, phrasing was constructed in a fashion that children would be able to comprehend; for example, rather than '...accepted a friend request on Facebook' this item was phrased '...made a friend on Facebook'. To ensure these vignettes were relevant to children, they were piloted with an eight-year-old (known to the researcher) and an 11-year-old recruited during piloting Study Two. Feedback included rephrasing one item was rephrased: '...worries about posting photos on Instagram because of other's opinions' to '...worries about posting photos on Instagram in case he doesn't get any likes', for the 8-year-old struggled with comprehension initially. Please refer to Appendix K to see the vignettes and overall flow of questions used with child participants.

Finally, and importantly, children are provided with the opportunity to share any further information, including any of their own online experiences. Neville, Adams and Cook (2016) highlight that providing participants with the opportunity for concluding thoughts is crucial as it prioritises their power. Where the participant feels in control, they are likely to share a greater depth of information; this is especially important at the end of the interview where they can mentally evaluate their responses so far and provide anything that the researcher may have overlooked (Powell & Snow, 2007). Further, this allows children the opportunity to present their reality in an alternative way, should the researcher have missed anything throughout the process of the interview (Kortesluoma, Hentinen & Nikkonen, 2003).



2.1.2 Parents and teachers

Parents and teachers have an important role within children's online autonomy (Livingstone, 2017) and the shaping of children's online risk and benefit perceptions (Livingstone & Helsper, 2008). For example, children with parents who use restrictive internet mediation behaviours reported fewer online risks, but also fewer online benefits (Livingstone et al., 2017). In order to comprehend children's SNS use embedded within their reality we must also explore their parents' own perceptions and internet mediation behaviours. Further still, children report being informed about the risks of SNS use by their parents and teachers equally (Ofcom, 2019); this highlights the mediating role of teachers within children's SNS use too. Exploring teachers' SNS perceptions are therefore equally as important as this provides a more detailed understanding of children's reality. Importantly, parents, children and teachers were recruited so that adults' perceptions and internet mediation behaviours could be directly related to their child's/pupil's own perceptions. The questions incorporated within parent interviews comprised three sections: 1) general SNS use, 2) risk and benefit perceptions and 3) internet mediation behaviours.

As with children, adults (parents and teachers) were first asked about their own SNS access to establish their familiarity with SNS, but also an awareness of the digital literacy practices within the home and school environments. We know that parents who use SNS often foster greater digital literacy practices within the home (Terras & Ramsay, 2016) and this is important to know in terms of their child's reality. Equally, teachers who utilise digital devices more frequently within the classroom often have more positive perceptions of online technology (Elstad & Christophersen, 2017), which could in turn mediate children's own perceptions.

Adults were then asked about the risks and benefits of SNS use specifically in relation to their child/pupil, as well as their future. Parental internet mediation behaviours typically relax during adolescence (Coyne et al., 2017) and therefore it is important to establish whether these behaviours are unique to the iGen or not. Teachers' perceptions of pupils' online use may also change with age (Eden & Heiman, 2013), although research on this is limited. As opposed to children, adults are able to articulate their thoughts about abstract concepts with greater ease (Zanov & Davison, 2010). As a result of this, vignettes were not used with adults as they would not need these to assist them in formulating their perceptions.



In terms of internet mediation behaviours (Livingstone, 2017), adults were asked how they support their child's/pupil's digital engagement, specifically with relation to SNS use. To provide a fuller understanding of why adults may utilise such behaviours, participants were also asked about where they seek advice in mediating their child's/pupil's SNS use. Particularly during primary school, teachers and parents have a close relationship and collaborate in mediating children's development (Minke et al., 2014; Villa & Thousand, 2005). A great wealth of literature highlights the importance of this collaboration in terms of a range of academic skills (Hughes & Kwok, 2007) and social skills (Kim & Dindia, 2011). Based upon this, it is important to know whether parents' internet mediation behaviours are also shaped by school support. Additionally, understanding any other sources of information is equally important as this contextualises how parents own perceptions may be shaped and how this may subsequently inform their behaviours. With regards to teachers, we know that e-safety education varies hugely amongst schools (Shipton, 2011). In light of this, it is important to know how school policy and curriculum shape teachers' internet mediation behaviours and to what extent this subsequently shapes children's own perceptions. Exploring where adults source information to inform their internet mediation behaviours is therefore important in understanding their impact upon children's reality.

Lastly, as with children, adults were provided with the opportunity to conclude the interview with their final thoughts. This provided participants with the opportunity to share any anecdotes as well as provide any further information which may contextualise their perceptions or internet mediation behaviours further (Adams & Cook, 2016).

2.2 Sample size

Justification of sample size within qualitative research has been hotly debated (Vasileiou et al., 2018). Boddy (2016) highlights the importance of critical discussion around sample size, with particular emphasis upon enhancing data richness whilst avoiding theoretical saturation. Considering the variety of SNS, parenting techniques and e-safety approaches in schools, the research question of this study addresses a broad and heterogenous topic. A large sample size is therefore deemed appropriate as the heterogeneity would avoid data saturation (Boddy, 2016). Marshall et al. (2013) recommend 20-30 participants for a heterogenous topic. Due to the nature of our



participants being linked to each other in terms of adults being the parent/teacher of each child, a sample size of 20-30 per group was used as a baseline.

2.3 Analyses

All interviews are transcribed verbatim by the lead researcher to ensure familiarity with the data (Dearnley, 2005; Halcomb & Davidson, 2006). Braun and Clarke's (2012, 2015) thematic analysis framework is used to formulate emergent themes within the context of the research question. Due to the use of vignettes within the children's interviews, as well as the semi-structured nature of all interviews responding to notions within the literature, data on certain topics (e.g., social capital) are expected. Due to this, it would be inappropriate to use a framework such as grounded theory, as this approach prioritises the organic construction of unintended emergent themes (Charmaz & Belgrave, 2007). Yet, an expectation for some new themes to emerge was framed by the open questions presented to participants and the researcher's maintenance of objectivism. As a result, a content analysis, whereby exact meanings and concepts are derived from specific text (Neuendorf & Kumar, 2015) would be equally inappropriate. Thematic analysis prioritises a flexible approach whereby themes, in response to a research question, can emerge across a dataset with asynchronous meaning (Braun & Clarke, 2012). Considering this study's focus upon SNS perceptions and internet mediation behaviours within children's reality, we expect themes to appear throughout all participant groups. This choice of analyses is therefore appropriate in responding to our research question.

3. Study four: Assessing children's SNS behaviours and their mental health and wellbeing

The emergent themes of Study Three provide context to Study Two by broadening our understanding of children's SNS behaviours and perceptions. Importantly, research considering the long-term effects of children's SNS use is lacking. Considering the uniqueness of the iGen, it is vital that we consider the potential long-term relationship between SNS use and development.

The longitudinal design was constructed across two time points, six months apart: January and June/July. Selecting these time points was shaped by theoretical and practical considerations. Firstly, collecting data in January was more favourable than September in terms of meaningful data collection. In UK schools, September marks the beginning of a new academic year following a six-week summer holiday; this period



can be turbulent and unsettling for children due to a new routine, different teacher, etc (Ackerman, Brown & Izard, 2004). Also, experiences over the summer holiday can impact children's adjustment to the new academic year (Dowling & Osborne, 2020). Based upon this, data concerning wellbeing and mental health could be impacted by a much broader range of factors and thus invalidate responses. By collecting data in January, children have had time to settle into a routine and thus are more likely to provide meaningful responses which are less influenced by external factors. As well as this, the second time point was conducted in June (one in July) before the summer holiday to avoid summer experiences potentially skewing data.

Practically, schools also have more availability at these times. In September, the start of a new year is very busy and teachers have limited spare time. Equally, April and May are when Year Six students (aged 10-to-11) take their SATs exams (a national exam) and so primary schools are busy in preparation for these. However, January, June and July are more flexible and thus gaining access to participants is more feasible. As well as this, a calmer general school environment allows for data collection sessions to be conducted in more appropriate conditions and this is beneficial for meaningful data.

3.1 Risk and benefit behaviours

Behaviours associated with SNS risks and benefits will be measured within this study to explore their potential relationship with the mental health and wellbeing outcomes. To measure self-disclosure and self-presentation, the same measures as used within Study Two are replicated within this study due to their internal reliability being established during the analyses of Study Two. Specifically, these entail self-disclosure, self-presentation, bonding and bridging social capital, cyberbullying perpetration and victimisation and self-esteem.

3.2 Mental health and wellbeing

A great deal of literature considering the long-term effects of SNS use upon mental health specifically considers anxiety and depression (Aalbers et al., 2019; Choudhury et al., 2013; Lin et al., 2016; Shensa et al., 2017). Furthermore, the Good Childhood Report (2017) and then Mental Health Foundation (2018) has reported a rise in children's experiences of anxiety and depression. Based upon this, the mental health focus of this study prioritises children's anxiety and depression. The Revised Child Anxiety and Depression Scale (RCADS; de Ross, Gullone & Chorpita, 2002), designed for children aged 8-to-18 years, was selected as a measure due to its prominent use



within developmental mental health research. This scale is useful in breaking down anxiety and depression to its different subtypes: generalised anxiety disorder (GAD), major depressive disorder (MDD), social phobia, panic disorder, separation anxiety disorder (SAD) and obsessive compulsive disorder (OCD; de Ross, Gullone & Chorpita, 2002). This scale has been repeatedly assessed for internal reliability (Esbjorn et al., 2012). Each of these subscales have been validated through factor analyses conducted by a number of replication studies (Chorpita et al., 2005; McKenzie et al., 2019).

The Kidscreen-27 Index (2004) is widely used to measure children's (aged 8-to-18 years) wellbeing and has been repeatedly tested for internal reliability (Ravens-Sieberer et al., 2007) and generalisability to different cultures (Jafari, Bagheri & Safe, 2012) and developmental subsamples (Shannon et al., 2017). Importantly, this scale comprises 27 items which consider various aspects of wellbeing: physical wellbeing; psychological wellbeing; parent relations and autonomy; social support and peers; school environment (Kidscreen, 2004). Although these are not considered subscales, due to their accumulative construction of wellbeing, they are important in developing a reliable measurement of wellbeing (Shannon et al., 2017).

3.3 Sample size

In order to determine high statistical power, a power analysis was conducted to establish the required sample size; this was completed using the pwr package in R (Champely, 2020). The UK population of pupils in primary education in 2019 totalled 4,272,090 (DofE, 2019) and so this figure was included within calculations. With a confidence level of 90% and a margin of error between 5-7%, a range between 139-273 participants were required for a powered sample. Following data collection, the margin of error was calculated using the sampler package in R (Lohr, 1999). A margin of error of 5% was identified and thus 273 participants were required at both time points within analyses.

4. Summary

The structure of this thesis' methodology has been designed to carefully consider children's reality and how SNS behaviours and perceptions may shape development. Firstly, the uniqueness of children's (aged 7-to-12 years) reality is considered by investigating adolescent risk concern and benefit perceptions via an online survey in Study One. Following this, how children behave online and to what extent this relates



to benefit and risk outcomes is explored via an online survey in Study Two; this is useful in understanding how younger children, under 13 years, are engaging with SNS. In Study Three, a broader understanding of children's SNS perceptions is developed by conducting semi-structured interviews with children's, parents and teachers. Importantly, this study provides insight into children's reality: how they perceive the risks and benefits of SNS use and to what extent adults' internet mediation behaviours shape these perceptions. Furthermore, this provides a comparison with the results of Study One, whereby adolescents expressed risk concern and benefit perception. Again, this is important in understanding the uniqueness of the iGen. Finally, within Study Four, children's SNS behaviours are investigated with regards to the potential long-term associations with mental health and wellbeing via a longitudinal online survey. Exploring how SNS may be associated with mental health and wellbeing during childhood is important in developing an understanding of the role of SNS use within children's lives.

Crucially, this thesis' methodology prioritises children's role within research by ensuring that they act as participants within each study. As opposed to asking adults about children's SNS use, this methodology ensures that meaningful data is collected which reflects the realities of children's lives.



Chapter 3

Adolescents' perceptions of the risks and benefits of SNS use

1. Abstract

Social networking sites (SNS) are becoming increasingly prevalent; at present 74% of adolescents (12-15) report using SNS (Ofcom, 2019). Research predominantly highlights the risks of SNS use (e.g., cyberbullying); yet, SNS also presents potential benefits (e.g., enhancing social relationships). This study aims to gain an understanding of adolescent perceptions of the benefits of SNS use and to what extent risk concern may predict these. Adolescents (N= 342; 53.3% female; M= 13.92, SD=1.35) completed two measures: a task of whether items relating to SNS use were perceived as positive and an adapted SNS risk concern scale (Buchanan et al., 2007). Findings suggest females are more concerned about the SNS risks than males. In particular, females' SNS risk concern positively predicted their perceptions of the benefits of disclosing to family online, whilst older females viewed this less favourably. Also, both males and females who view social capital positively also view self-development positively, and vice versa. E-safety education should consider both the benefits and risks of SNS use, which are more appropriate to adolescents.

Keywords

Adolescence, risks, benefits, social media, perception.

2. Introduction

Adolescents born from 1995 onwards are often referred to as 'Generation Z' (Gen Z; Turner, 2015); born and raised submersed within technology and high connectivity. In such a digitally literate and reliant world, using the internet to connect and explore social interactions has become an integral part of everyday existence for many individuals (O'Keeffe & Clarke-Pearson, 2011).

Social networking sites (SNS) have increased in prevalence since the creation of Facebook in 2004, with sites such as Instagram, SnapChat and Twitter created in its wake. These sites are being increasingly used by both adults and adolescents (Livingstone, 2017). A recent Ofcom report identified that adolescents' (aged 12-15)



SNS use has remained stable over the past five years with an average of 70% of adolescents owning their own profile (Ofcom, 2019). The continued popularity of SNS, as well as the evolution of newer sites such as TikTok, suggests that these sites are integrated within adolescents' lives (Ofcom, 2019).

Literature to date has focused predominantly on the amount of time adolescents spend online and the risks associated with this, often failing to recognise the benefits. Further, frequency of SNS use is debated within the literature in terms of how impactful it really is upon the risks and benefits (Domingues-Montanari, 2017). Crucially, research has not explored adolescents' risk concern and to what extent this may inform their perceptions of the benefits. This study aims to investigate how concerned adolescents are about the risks of SNS use and to what extent this may predict their perceptions of the benefits.

2.1. Risk concern

Perceptions of risks and benefits are embedded within Rogers' protection motivation theory (1975; Rogers & Prentice-Dunn, 1997): our perceptions are shaped by how likely we perceive a risk, how severe it may be and how effective protective measures may be. Where the likelihood and severity are high and protective measures are low, the risks are often perceived as outweighing the benefits (Roger, 1983). Wildavsky and Drake (1990) extend this by arguing that risk concern moderates risk and benefit perceptions; the more concerned an individual is about a risk, the more likely they are to perceive the likelihood and severity as high and the protective measures as low. Further, this individual is likely to perceive less benefits (McCaul, Schroeder & Reid, 1996; Roger, 1983).

Much literature identifies that adolescents' perceptions of risks and benefits are also informed by their risk concern (Benthim, Slovic & Severson, 1993; Millstein & Halpern-Felsher, 2002). Such findings have been replicated across domains such as smoking (Halpern-Felsher et al., 2004), underage drinking (Goldberg et al., 2002) and illegal substance misuse (Grevenstein, Nagy & Kroeninger-Jungaberle, 2015). Despite knowledge of this framework's applicability within adolescence, its application to SNS use is lacking.

Adolescent risk concern and perceptions of SNS use has had some research coverage (Lareki et al., 2017; Youn, 2009; Youn & Hall, 2008) but only in specific relation to the risks. To date, an understanding of how risk concern relates to



perceptions of SNS benefits in adolescence is lacking. It is important to understand how perceived benefits may be related to concerns around the risks of SNS use, or if they are viewed as two separate concepts.

2.2. Benefits of SNS use

As children age into adolescence there is a greater emphasis placed upon friendships, thus elevating the importance of social networks (Brown, 2004; Steinberg & Morris, 2001; Throuvala et al., 2019; Wurtele, 2017). With adolescents facing geographical and financial restrictions, establishing online social capital enables connections across distances (Bargh, McKenna, & Fitzsimmons, 2002; Ellison, Steinfield, & Lampe, 2007). Large percentages of adolescents report utilising SNS for the social benefits, including: feeling connected to their friends' lives (81%), enhancing friendship diversity (69%) and supporting each other (68%; Anderson & Jiang, 2018). In order to access these benefits disclosure is required (English & John, 2013).

Disclosure online can be beneficial. Restrictions of face-to-face interaction (i.e., shyness or anxiety) are reduced online due to a lesser likelihood of rejection (Stritzke, Nguyen, & Durkin, 2004). This can encourage less confident individuals to disclose online and develop friendships, which can in turn enhance self-esteem (Bargh, McKenna, & Fitzsimmons, 2002; Sherman & Cohen, 2006). For example, disclosing creative skills, such as artwork or music online may receive positive feedback (e.g., 'likes' and comments) subsequently enhancing self-esteem (Burnette, Kwitowski, & Mazzeo, 2017; Donath & Boyd, 2004). Seeking support and advice online is also achievable via disclosure, enhancing feelings of belonging and community which may negate negative online experiences (Bargh, McKenna, & Fitzsimmons, 2002; Donath & Boyd, 2004).

Managing impressions that others form through self-presentation behaviours can be more systematic online than offline as it is less immediate; the individual has time to construct an identity (Rosenberg & Egbert, 2011). With the introduction of image-based apps, such as Instagram and SnapChat, systematic self-presentation has become popular (Ellison, Heino & Gibbs, 2006; Livingstone, 2008; Espinoza & Juvonen, 2011). Receiving positive feedback for the real and ideal selves can enhance self-esteem and general wellbeing (Burke, Kraut & Marlow, 2011; Donath & boyd, 2004; Forest & Wood, 2012). Positive feedback can affirm positive self-concept goals, enhancing self-efficacy and self-esteem (Yang, Holden, & Carter, 2017). For



example, adolescents report feeling encouraged to present their creative side online (74%) due to increased feelings of confidence (69%; Anderson & Jiang, 2018). These creative aspects of self-presentation techniques can also enhance digital literacy skills, potentially benefitting users in future careers or hobbies (Choi & Behm-Morawitz, 2018).

Disclosing online may be beneficial. Online disinhibition, social capital and self-presentation may enhance the outcomes of friendship quality, wellbeing and self-esteem (Best, Manktelow & Taylor, 2014; Ellison, Steinfield & Lampe, 2007). Despite recognition of these SNS benefits, research conducted with adolescents largely focuses upon the risks (Koutamanis, Vossen & Valkenburg, 2015; Leung, 2014) and this is reflected within portrayal of SNS in the media (Weinstein, 2018) and policy (Livingstone & Haddon, 2012). In fact, adolescents refer to the risks of SNS use sooner than they do the benefits (O'Reilly et al., 2018). Rarely are adolescents' perceptions of the benefits considered. Where the risks are more frequently highlighted, adolescents may have a skewed perception of the benefits due to heightened risk concern.

2.3.Risks of SNS use

The very nature of SNS use requires self-disclosure, and individuals must decide on the extent to which they choose to broadcast (disclose to anyone online), disclose publicly (to anyone within their network) or privately (to a specific individual or group) to balance being open in comparison to over-disclosing, where over-disclosure is associated with risks (Venkatanathan et al., 2014). For instance, in person, demographic information such as birthday, relationship status and sexual orientation are likely to be publicly disclosed (Derlega & Grzelak, 1979), but disclosing such information online is risky.

Adolescents are more likely to disclose information, and in greater detail, than adults (Christofides, Muise, & Desmarais, 2012). This disclosure may likely be broadcast, rather than public or private; for example, EU Kids Online have identified that 43% of SNS users aged 9-16 years do not set their profiles to private (Livingstone, Haddon, Gorzig, & Ólafsson, 2011) meaning that their posts or open to anyone who looks. Importantly, even after applying security settings, adolescents are still at risk of exposure due to links with mutual friends or other users screenshotting and saving their activity (Livingstone, 2014).



Adolescents are therefore at a greater risk for over-disclosure: disclosing information inappropriately, misjudging the potential audience or outcome (Bazarova & Choi, 2014). Further, adolescents often fail to perceive the long-term impact of their online activity: their digital footprint (McBride Murry, Berkel, Gaylord-Harden, Copeland-Linder, & Nation, 2011; O’Keeffe & Clarke-Pearson, 2011). Managing online disclosure, with consideration of potential future implications, is not prioritised by adolescents (Anderson & Jiang, 2018; Jordán-Conde, Mennecke, & Townsend, 2013). For example, in a descriptive report of adolescents’ SNS behaviours, only 23% of adolescents prioritised managing online disclosure in response to comments about their future (PEW Report; Madden et al., 2013). This apparent lack of concern may predict perceptions of over-disclosure.

Over-disclosure is also risky in terms of others’ online behaviours. For example, an individual could post online and tag others (Besmer & Lipford, 2009; Smith & Kidder, 2010). In this instance, the risk of over-disclosure is heightened for those tagged despite their passive role in the posting behaviour.

Social capital, the formation and maintenance of social networks (Putnam, 1993), requires some level of disclosure. SNS provides a platform to bridge social capital, which refers to forming new relationships (Ellison, Steinfield & Lampe, 2007). Disclosing to strangers, however, is clearly risky. Adolescents typically identify strangers as untrustworthy, using security settings to protect themselves from the risks of disclosing to strangers online (Livingstone, 2006, 2014; Mesch & Talmud, 2007). Adolescents are less likely to use security settings when bonding with their online friends (Livingstone, 2008).

Bonding social capital, which refers to strengthening “trust-based ties” with attached individuals (p.1499, Young & Lee, 2013; Putnam, 2000), is the most common use of SNS (Ellison, Steinfield & Lampe, 2007). Problematically, bonding online leads to a greater sense of mutual trust and an increase in the likelihood of self-disclosure, even if the friendship does not hold the same strength offline (Boucher, Hancock, & Dunham, 2008; Patchin & Hinduja, 2010; Zhao, 2006). Misplaced trust can expose the user to friendship and romantic difficulties, as well as experiences of cyberbullying (Livingstone & Haddon, 2012; Sengupta & Chaudhuri, 2011). These experiences can impair wellbeing and lead to long-term mental health issues (Livingstone & Haddon, 2012).



During adolescence, self-presentation behaviours are increasingly utilised in order to manage impressions of others (Ellison, Heino, & Gibbs, 2006; Gardner & Steinberg, 2005). Online, adolescents can feel pressured to craft a particular identity online which may encourage presenting the false or ideal self (43%; Anderson & Jiang, 2018). Presenting the self in a way that others may perceive as inauthentic can expose the user to cyberbullying (Dredge, Gleeson, & De la Piedad Garcia, 2014). Importantly, receiving negative feedback on posts that present the real self is associated with negative self-esteem (Jackson & Luchner, 2018; Rui & Stefanone, 2013; Tokunaga, 2011), and receiving positive feedback on posts that present a false self is also associated with lower self-esteem and more negative self-concepts, likely due to an awareness of the distortion (Jackson & Luchner, 2018; Schlenker & Leary, 1982). Particularly during adolescence, a time where external feedback is strongly valued and where they are developing and refining their self-concept, exposure to these risks may increase (Ybrandt, 2008).

Over-disclosure can therefore increase the risks associated with social capital and impression management; these risks may then produce negative outcomes such as friendship difficulties, cyberbullying or issues later in life (Hsu, 2015; Maghsoudi, Shapka & Wisniewski, 2020). Adolescents may be concerned about these risks. When we consider the social and developmental volatility of adolescence (Blakemore, 2012; Magnusson, Stattin & Allen, 1985), and the permanency of one's digital footprint (McBride Murry et al., 2011), it is possible that adolescents view the likelihood and severity of SNS risks as very high. If so, their perceptions of the benefits may be low (McCaul, Schroeder & Reid, 1996).

2.4. Research Focus

For adolescents, SNS use has become an important aspect of socialisation. Research supports that appropriate levels of disclosure can be beneficial for social capital and self-presentation, promoting positive outcomes. On the contrary, over-disclosure can expose the user to risks associated with social capital and self-presentation. Risk concern may predict perceptions of the benefits. Importantly, there is limited research investigating adolescent perceptions of SNS use and that which does focuses upon the risks more so than the benefits. Investigating adolescent online risk concern and whether this predicts their perceptions of the benefits will develop an understanding of how adolescents view SNS use.



The present study aims to explore adolescents' (aged 13-18) risk concern and how this may predict perceptions of the benefits of SNS use. Given that during adolescence there is increasing importance placed on their friendships and motivation for positive evaluations (Blakemore, 2008), we will assess if adolescents' risk concern will be related to their perceptions of SNS use as being beneficial (in line with Roger's, 1975, protection motivation theory) or if these are separate constructs. For the first time adolescents will be asked to identify what they perceive as a positive of SNS use, negative, both, or neither to understand their views on benefits. Developing an understanding of how adolescents perceive the benefits of SNS use and to what extent risk concern may predict this, will support parents, practitioners and policymakers in appropriately supporting and informing adolescent SNS use.

3. Method

3.1. Participants

A sample of 426 adolescents aged 13 to 18 ($M= 13.92$, $SD=1.35$; 53.5% female) were recruited from five secondary schools across London and the home counties. Participants identified their hometowns within Surrey ($n = 135$); Essex ($n = 119$); Berkshire ($n = 86$); London ($n = 72$); Buckinghamshire and Hampshire ($n = 5$). Participants were excluded from the analyses if they completed less than 80% of the items on the risk concern scale or the risks and benefits perception task, resulting in a sample size of 342. Participants' ethnicity was predominantly White (80.8%), followed by Mixed (6.8%), Black (4%), Asian (2.3%) and Other (0.2%). Ethical approval was granted through the Royal Holloway Research Ethics Committee, and the study was conducted in accordance with British Psychological Society guidelines. Following ethical approval, schools were contacted by the lead researcher and invited to participate. Upon confirming interest to participate, the schools received information letters for teachers and parents, explaining the rationale, procedure and intended impact of the study. Parents provided consent through opt-out parental consent letters. Before beginning the online survey, all adolescents were verbally informed of the study and provided their consent.

To understand how participants were using and accessing SNS, we asked them about device ownership, which SNS sites they access, how often they access them and where they access them (Livingstone et al., 2011; Mascheroni & Ólafsson, 2015). On



average, adolescents personally owned three different devices ($SD = 1.22$), they reported that their parents also owned three different devices ($SD = 1.22$) and there were on average five devices that could connect to the internet per household ($SD = 1.40$). We also asked adolescents at approximately what age they first used these devices (irrelevant of internet connection; $M = 8.02$ years, $SD = 1.20$), as well as approximately when they first accessed the internet (before starting school: 20.4%; when in primary school: 75.4%; when in secondary school: 4%; when in college/sixth form: 0.3%). Further findings regarding adolescents' SNS access are provided in Table 1.

3.2.Measures

We constructed our survey within the Qualtrics platform, which allowed participants to complete the survey online and simultaneously record responses. Participants completed the survey within their school ICT suite, using individual computers with a mouse, or a tablet using touch screen, to make decisions. The survey incorporated an informed consent introductory page followed by descriptive items and a debrief on the final page. The measures included a risk concern scale to measure adolescents' SNS risk concern in general, and a perception task to assess perceptions of the benefits identified within current literature. All responses were recorded by Qualtrics and kept securely on a password-protected account; data was exported to SPSS for analysis.

3.2.1. SNS risk concern

We developed a 15-item SNS risk concern scale. Using Buchanan, Paine, Joinson, and Reips' (2007) online risk concern scale as a basis, we selected seven items that were related to SNS use and modified items if required to make the link to SNS explicit (e.g., amended 'email' to 'direct message'; 'Are you concerned that a direct message you send may be read by someone else besides the person you sent it to?'). Nine of Buchanan et al.'s (2007) items were not included due to being unrelated to SNS use (e.g., 'that an email containing a seemingly legitimate internet address may be fraudulent?'). In addition, a further eight items were constructed in order to relate directly to the research focus (SNS), linked to risks identified in the introduction. Adolescents rated their degree of risk concern on a 5-point Likert scale, with responses being: 'Not at all', 'Slightly', 'Somewhat', 'Moderately' and 'Extremely'. No items were reverse coded; mean scores were calculated (range 1 to 5) with higher



figures indicating greater SNS risk concern. This scale had high internal reliability, $\alpha = .88$.



Table 1. Frequency of adolescents (N=342) who own a SNS profile, who access personal SNS accounts daily or weekly, and who access at particular locations.

	Profile ownership		Regularity of access		Location of access				
	Yes	No	Daily	Weekly	Home (Bedroom)	Home (Other room)	Friend's house	On-the-go	School
Instagram	279	63	256	86	338	311	272	202	131
SnapChat	247	95	248	94	307	288	261	222	156
Facebook	69	273	70	8	123	95	50	42	25
Twitter	56	286	74	16	116	99	50	55	27
Other*	68	274	42	1	n/a				

*Whatsapp; Pinterest; YouTube; Tumblr; Music.ly; Reddit; Kik.



3.2.2. Perceptions of the benefits of SNS use

In accordance with the literature, we developed a task to explore adolescents' perceptions of the benefits of SNS use. The task included 30 items around themes of online disclosure, social capital and self-presentation (as these are prominent benefits identified within the literature). Seven of the 30 items were filler items relating to digital literacy due to their neutral nature (e.g., 'learning how to upload media'); these items were not incorporated within the statistical analyses.

In this task participants were asked to allocate each item into one of five boxes depending on their perception of the item (positive, negative, both positive and negative, neither positive or negative, or unsure). Items were coded so that when an item was judged as positive it was scored as +1, negative as -1, and both positive and negative as 0. Due to the focus of this task being on adolescents' benefit perceptions, perceptions that an item was neither a risk nor a benefit, or where participants were unsure, were excluded from analysis. To establish subscale scores, we conducted a factor analysis.

3.2.3. Factor analysis

A principal axis factor analysis was conducted on the 23 items with oblique rotation (direct oblimin). The scree plot presented at least three factors to be retained above Kaiser's criterion of 1 (Appendix B). Appendix C presents the factor loadings following rotation in accordance with the clustering of the loadings above a value of .30. Items represented within each factor include those related to social capital, particularly bonding social capital (factor 1, 13 items; e.g., "Maintaining a close connection to each person on your friend's list"), related to self-development (factor 2, six items; e.g., "Seeing what your friends have commented on"), and related to disclosure to family members (factor 3, four items; e.g., "Family members being able to see your statuses and comments"). Table 2 presents the items per factor.



Table 2. A summary of all items factored into either social capital, self-development or disclosure to family.

Factor (Completion rate <i>n</i>)	Items
Social capital (317)	Being tagged in other’s posts in general Maintaining friendships offline Maintaining a close connection to each person on your friend's list Asking for advice Seeking support Making group plans based around a common hobby or interest Making plans with friends to do something offline Joining groups related to your interests and hobbies Expressing yourself to a wider network of people than you do offline Expressing your feelings online Discussing interests and hobbies Expressing your personality online How you feel about yourself based upon your friends' posts
Self-development (214)	Being tagged in other's posts without knowing Connecting with a wider network of friends Seeing what your friends have commented Seeing what your friends have 'liked' How you feel about yourself based upon who you have on your friends list How you feel about yourself based upon your own posts
Disclosure to family (159)	Connecting with family members Family members being able to see what you 'like' Family members being able to see your statuses and comments Connecting with your parents

3.2.4. Scoring

For each subscale a mean subscale score was computed (range -1 to +1) with higher scores indicating greater benefit perception. All scales presented high internal



reliability: social capital, $\alpha = .827$; disclosure to family, $\alpha = .780$; self-development, $\alpha = .761$.

3.3. Procedure

Participants were seated in either their school's ICT suite, with desktop computers, or in their classrooms with an iPad or laptop. The online survey was adaptable for tablet use, so the layout of the questions did not change whether participants used a desktop, laptop or tablet. Participants were in groups of 20-30 but were seated individually with their device. Participants who were registered as special educational needs (SEN) were accompanied by their designated support assistant or another member of staff from the school, if required. Presence of support staff was noted by the child's unique identifier in case this was later required (e.g., data an outlier).

Participants were verbally informed about the study, that their results were completely anonymous, and provided with the opportunity to withdraw or ask questions prior to commencing the study. Participants were also able to read the written information displayed at the start of the survey which repeated the verbal description and provided the researchers' contact details. Participants were clearly informed that they could skip questions if they wished and may stop at any point, but they would not be able to return to previous pages of the survey once they have moved on to delete or change answers, nor could answers be identified and removed following completion of the survey. Participants provided their consent by selecting the appropriate option on the screen; those who chose to withdraw were directed to the class teacher and removed from the room. The survey progressed in a fixed order: demographics, information on access to SNS, SNS use, completion of the SNS risk concern scale, perceptions of risks and benefits task. Lastly, participants were shown the debrief information. The survey took approximately fifteen minutes. Once participants had finished, they were provided with a written debrief which outlined the aim of the research and contact details. Participants were also provided with the opportunity to ask questions at this stage.

4. Results

To assess our research aim of exploring adolescents' risk concern and their perceptions of the benefits of SNS use, we conducted a series of hierarchical



regression analyses. These analyses enabled us to identify if level of SNS risk concern predicted adolescents' perceptions of the benefits. Also, this allowed us to assess whether descriptors of age, gender (binary: 0 males, 1 females), and number of devices owned predicted perceptions of the benefits. The number of devices owned (that connected to the internet) was included in analyses as research suggests that greater device ownership may predict perceptions (George et al., 2018; Hundley & Shyles, 2010; Wartella, 2002). The bivariate correlations are presented in Table 3. To understand predictors of risk concern we conducted a multiple regression analyses, with age, gender and total number of devices owned as the predictors. We found that including our predictors significantly improved the model, $F(1, 143) = 1248.55, p < .001$, accounting for 90.6% of the variance. Specifically, being male, $\beta = -1.42, t = -19.75, p < .001$ was independently associated with SNS risk concern. Age, $\beta = .007, t = .203, p = .839$, and total devices owned, $\beta = .055, t = 1.48, p = .139$, did not predict SNS risk concern. Given that gender was a significant predictor of risk concern, we have included the interaction between risk concern and gender within subsequent analyses to assess if gender moderates the association between risk concern and SNS perceived benefits.

Three hierarchical multiple regressions were conducted to predict the following outcome variables of benefit perceptions representing social capital, self-development, and disclosure to family. Within block 1, age, gender and total number of devices were entered into the model. In block 2, the interactive predictor of risk concern and gender was entered into the model. In block 3, we added the perceived benefits scores that were not the outcome variable. Table 4 presents a summary of the findings.

Finally, where the interactive predictor is significant within a model, we assessed if gender moderated the relationship between risk concern and our outcome variable. We conducted the analyses separately for males and females with entering age and number of devices in block 1 and risk concern in block 2. These findings are presented in Table 5.



Table 3. Mean (SD) and Bivariate Pearson correlations for number of types of internet devices owned, risk concern scores, and perception of risks and benefits (social capital, self-development, and disclosure to family) scores.

	Mean (SD)	Internet devices owned	Risk concern	Social capital	Self- development	Disclosure to family
Age	13.95 (1.37)	-.155**	.02	-.158**	-.069	-.037
Internet devices owned	4.81 (1.35)		.096	.091	.024	.022
Risk concern	2.45 (.92)			.027	.034	.015
Social capital	.54 (.38)				.396**	.113
Self- development	.53 (.57)					.210*
Disclosure to family	.53 (.56)					

*p<.01, **p<.001.



Table 4. Regression analyses summary for predictors of social capital, self-development, and disclosure to family scores.

	Social capital			Self-development			Disclosure to family		
	β	t	p	β	t	p	β	t	p
Block 1 change statistics	$R^2 = .021, F(3, 144) = 1.054, p = .371$			$R^2 = .055, F(3, 144) = 2.800, p = .042$			$R^2 = .096, F(3, 144) = 5.095, p = .002$		
Age	.029	.941	.348	1.01**	2.798	.006	-.170***	-3.907	<.001
Gender	.116	1.370	.173	-.065	-.654	.514	.008	.371	.711
Total devices	.008	.224	.823	.048	1.180	.240	-.027	-.823	.412
Block 2 change statistics	$R^2 = .029, F(3, 142) = .535, p = .587$			$R^2 = .061, F(2, 142) = .448, p = .640$			$R^2 = .131, F(2, 142) = 2.833, p = .062$		
Age	.023	1.088	.279	.105	2.859	.005	-.161	-3.941	.001
Gender	-.022	-.482	.630	-.191	-6.38	.524	-.298	-1.859	.065
Total devices	.010	.282	.778	.050	1.209	.229	-.036	-.796	.427
Risk concern	-.120	-.785	.433	-0.10	-.055	.956	-.364	-1.639	.103
Risk concern x gender	.095	.960	.339	.041	.355	.723	.094	2.520	.013
Block 3 change statistics	$R^2 = .129, F(2, 140) = 8.058, p < .001$			$R^2 = .094, F(2, 140) = 2.568, p = 0.80$			$R^2 = .198, F(2, 140) = 5.896, p = .003$		
Age	-.010	.506	.613	.093	2.469	.015	-.151**	-3.747	.002
Gender	-.227	.049	.961	-.186	-6.16	.539	-.779	-2.179	.031
Total devices	-.003	-1.134	.258	.047	1.146	.254	-.040	-.600	.550
Risk concern	-.184	-1.255	.212	.005	.028	.978	-.411	-1.913	.058
Risk concern x gender	.144	1.502	.135	.030	.254	.800	.342*	2.668	.016
Social capital				.207*	2.036	.044	-.394**	-3.208	.001



Table 5. Regression analyses summary for predictors of disclosure to family.

	Disclosure to family			Block change statistics	
	β	t	p	Significance	R ²
Males					
Block 1				F(2, 128) = 2.42, p = .093	.198
Age	-.120	-1.951	.053		
Total devices	.039	.659	.511		
Block 2				F(1, 117) = .01, p = .910	.199
Age	-.121	-1.946	.054		
Total devices	.038	.635	.527		
Risk concern	.009	.113	.910		
Females					
Block 1				F(2, 122) = 10.36, p <.001	.381
Age	-.196	-4.553	<.001		
Total devices	-.040	-.778	.438		
Block 2				F(1, 121) = 4.67, p = .033	.421
Age	-.184	-4.303	<.001		
Total devices	-.048	-.936	.351		
Risk concern	.150	2.162	.033		

4.1.Perceptions of the benefits

4.1.1. Social capital

As illustrated within Table 3, including risk concern predictors in block 2 did not improve the model after factoring in age, gender and number of devices in block 1. However, including the other perceived benefits did improve the model; specifically the more positive adolescents were about self-development and disclosure to family the more positive they were about the use of social capital behaviours online. The final model accounted for a total of 12.9% of the variance and was significantly better than chance, $F(7, 140) = 2.96, p=.006$.



4.1.2. Self-development

As with social capital, including risk concern predictors in block 2 did not improve the model after factoring in age, gender and number of devices in block 1. Within block 1, we do see that older adolescents view self-development behaviours more positively ($\beta = 1.01, t = 2.80, p < .01$). The final model accounted for a total of 29.2% of the variance and was significantly better than chance, $F(3, 144) = 2.80, p = .042$.

4.1.3. Disclosure to family

Including risk concern predictors in block 2 improved the model after factoring in age, gender and number of devices in block 1, accounting for 11.1% of the variance and was significantly better than chance, $F(5, 142) = 4.27, p = .001$. When including the other perceived benefits, these improved the model from block 2; specifically, the less positive adolescents were about social capital the more positive they were about disclosing to family online. Also, younger participants are more positive about disclosing to family online ($\beta = -0.17, t = -3.91, p < .001$). The final model accounted for a total of 15.2% of the variance and was significantly better than chance, $F(7, 140) = 4.94, p < .001$.

5. Discussion

This study aimed to explore adolescents' concerns about the SNS risks and their perceptions of the benefits of SNS use. Our findings demonstrate that females are more concerned about the SNS risks than males. In general, adolescents' SNS risk concern does not predict the perceptions of the benefits, although for females, their risk concern did predict their perceptions of disclosing to family online. Interestingly, adolescents who perceived social capital as positive also perceived self-development as positive; and vice versa. However, those who perceive social capital as positive are more likely to perceive disclosure to family online as negative; and vice versa. The theoretical considerations of these findings are discussed.

5.1. Risk concern

Females appear more concerned about the risks than males. During adolescence, females seek social opportunities for the development of autonomy sooner than males (Rice & Dolgin, 2005; Steinberg & Silverberg, 1986). SNS use can be risky in terms of misinterpreted communication, unrealistic expectations of quantity or quality of connections and exposure to cyberbullying/friendship difficulties (Livingstone &



Haddon, 2012). Although males do also experience these risks, females' greater social exploration during adolescence may expose them more so than male adolescents (Steinberg & Silverberg, 1986). Therefore, females may be more concerned than males about encountering such risks.

Despite these concerns, we found that females who were more concerned about the SNS risks were more positive about disclosing to family online. This is in contrast to previous research which has identified that boys are more positive about disclosing to family online (Shin & Kang, 2016). As Wildavsky and Drake (1990) propose, those high in risk concern may perceive protective measures as low. As we know, females are more likely to restrict their online behaviour when they are concerned about the risks (Marrett et al., 2011) and this may be because they lack confidence in utilising more active protective measures. In terms of disclosing to family members, females may restrict their online behaviours by only disclosing to family members. Family members are trustworthy and so females may feel less concern and more protected by communicating with them.

Contrary to our expectations, adolescents' SNS risk concern did not influence their perceptions of social capital or self-development. Perhaps, adolescents do not perceive online social capital and self-development behaviours as risky for they are an extension of their offline social lives (Khan et al., 2016). Adolescents may feel skilled at managing their online social lives (Reich, Subrahmanyam & Espinoza, 2012). When we consider this in relation to Rogers' (1975; Rogers & Prentice-Dunn, 1997) protection motivation theory, adolescents may thus perceive the risks as low and their own protective measures as high; therefore, they may be more positive about these aspects of SNS use (Wildavsky & Drake, 1990).

5.2. Benefit perceptions

Concerning the benefits, the factor loadings identified items relating to social capital, self-development and disclosure to family. Overall, adolescents perceived these items as more positive than negative. This illustrates the positive perception that adolescents have of SNS use in relation to social capital, self-development and disclosure to family.

Those who communicate successfully online report greater self-esteem (Ellison, Steinfield & Lampe, 2007, 2012), sense of belonging (Zhao et al., 2012) and confidence (Holland, Reynolds & Weller, 2007; Valenzuela, Park & Kee, 2009);



these notions are also important in developing the self (Orth & Robins, 2014). In fact, Davis (2012) found that adolescents who communicated more successfully online also reported a greater sense of self. Equally, those with a greater sense of self are more likely to reap social capital benefits online, due to being confident with their ability to form and maintain friendships (Steinfeld, Ellison & Lampe, 2008). With regards to our findings, adolescents may perceive social capital and self-development online as positive due to accessing these benefits.

Despite adolescents' positive perceptions of social capital and self-development, we see that those who perceive social capital more positively are less likely to perceive disclosing to family as positive; and vice versa. Research widely reports that adolescents increasingly seek social autonomy (Blakemore, 2015). Disclosing to family members online may impair efforts to gain this autonomy and thus be perceived less positively. Equally, we know that adolescents engage in explorative, and sometimes risky, behaviours online (Eleuteri, Saladino & Verrastro, 2017; Vannucci, 2020); which adolescents would not want family members to see. Engaging in these behaviours can benefit popularity (Bryce & Fraser, 2014; Mascheroni, Vincent & Jimenez, 2015; Sasson & Mesch, 2014) and thus adolescents who are more orientated towards social capital may be motivated to behave in this way. In which case, they may perceive disclosing to family members online less positively as they may receive negative feedback (Coyne et al., 2014; Shin & Kang, 2016) and feel embarrassed in front of their friends (Ouvrein & Verswijvel, 2019; Verswijvel et al., 2020).

Further, older females were less likely to perceive the benefits of disclosing to family online. Shin and Kang (2011) found that older adolescents are more likely to disclose online; further, females typically disclose online more so than males (Valkenburg & Peter, 2011). During adolescence, females increasingly prioritise friendship intimacy (Galambos, 2004). Within a digital age, SNS provides the opportunity to develop this intimacy further (Rose & Rudolph, 2006). However, with intimacy comes privacy (Lenhart & Madden, 2007) and we know that adolescents seek social autonomy migrating away from family members to peers (Blakemore, 2008). In which case, disclosing to family members may be perceived negatively by adolescent females who seek greater friendship intimacy but less parental involvement within their social lives.



5.3. Limitations and future research

This study does present some limitations. Firstly, we had to develop a new measure to assess perceptions of SNS benefits, albeit this was built upon research findings related to benefits. Interestingly, self-esteem in the literature has been found to have both positive and negative relationships with SNS, but is often related positively with bonding social capital as well as impression management. As a result of this, items intended for a self-esteem factor loaded onto social capital and self-development factors instead. Although, it is interesting that these items factored more so on the self-development factor. More work is needed on understanding the benefits from adolescent perspectives in terms of self-esteem.

Also, it is surprising that concerns for the SNS risks did not predict perceptions of the positive more broadly. Potentially, this is due to the scale used to measure SNS risk concern theoretically capturing broader concerns in society, rather than adolescents' own specific concerns. We know from Rogers' (1979, 1985) motivation theory, that risk and benefit perceptions are embedded within our own concepts of protection and risk. Considering the SNS risk concern scale used within this study was initially used with older participants, the concerns presented within its items may not be applicable to adolescents. It would be interesting to consider this within future research. In particular, an SNS risk concern scale created by adolescents may be more successful in capturing the SNS concerns that apply to their perceptions of the risks.

Future research should explore adolescents' perceptions of the benefits of SNS use in greater depth in order to understand the positives of SNS use, not just the risks. Also, a greater consideration of gender differences in SNS use would be interesting to investigate in case of other nuances within adolescents' SNS use. Future research should consider the SNS use and perceptions of younger children to explore any potential developmental differences.

5.4. Conclusions

This study is unique in its exploration of adolescent SNS risk concern and to what extent this may predict their perceptions of the benefits. Our findings suggest that adolescents perceive SNS use as socially beneficial, irrespective of the risks. Females are more concerned about the SNS risks than males, and their concern is associated with less positive perceptions of disclosing to family members online. Adolescents



who perceive social capital as positive are more likely to perceive self-development behaviours online as positive; and vice versa. Although, those who perceive social capital as positive are less likely to perceive disclosing to family members online as positive; and vice versa. This is important to consider within e-safety education, policy, and intervention development. Guidance within policies should refer to the social opportunities of SNS, as well as consider risks that are more applicable to adolescents.



Chapter 4

Children's risk and benefit behaviours on social networking sites

1. Abstract

Despite the age restrictions of social networking sites (SNS) averaging age 13 years, younger children are engaging with these sites (Ofcom, 2019). Research has shown that SNS use exposes the user to many risks, such as cyberbullying and lower self-esteem. Alternatively, SNS use can enhance social capital. Current literature has considered these mostly within adolescent and adult samples. This study aims to investigate the extent to which children's behaviours on SNS predict risk and benefit outcomes. Within a sample size of 883, 351 children (aged 7-to-12 years) identified accessing SNS; these children completed an online survey measuring online self-disclosure, self-presentation, digital literacy skills, social capital, experiences of cyberbullying and self-esteem. Findings demonstrate that self-disclosure behaviours are associated with bridging social capital and that presentation of the real self is associated with the benefits of both bonding and bridging social capital. In terms of risk outcomes, self-disclosure behaviours are associated with cyberbullying perpetration and victimisation. These findings highlight that younger children (7-12 years) are accessing SNS and that their behaviours online are associated with both risky and beneficial outcomes. Importantly, parents, teachers and policymakers should consider the benefits of SNS use, as well as the risks, in order to empower children's digital engagement.

Keywords

Children, social media, behaviour, disclosure, cyberbullying.

2. Introduction

Having known only a world embedded within a fast-paced, connective reality, children of primary school age (7-12 years) are engaging with the internet (Rosen, 2010). In particular, children are recognising and utilising social networking sites (SNS; Ofcom,



2019). However, little remains known about children's online behaviour and to what extent this is associated with risky or beneficial outcomes.

The average age restriction for SNS is 13 years old. Despite this, children are engaging with SNS; in the United Kingdom 21% of 8- to 11-year-olds and 4% of 5- to 7-year-olds own an SNS profile (Ofcom, 2019). In fact, 74% of 8- to 11-year-olds and 64% of 5- to 7-year-olds are accessing YouTube (Ofcom, 2017). YouTube encourages behaviours similar to those of SNS such as interactional communication (comments, direct messages), as well as maintenance of an online presence (display photo, profile; Kraut & Resnick, 2011; Khan, 2017). With 51% of 3- to 4-year-olds also accessing YouTube (Ofcom, 2019), it may arguably be a foot-in-the-door for accessing other SNS.

SNS use facilitates self-disclosure (Ellison et al., 2011) and self-presentation behaviours to manage impressions (Yang & Brown, 2014); both of these behaviours are associated with risky and beneficial outcomes (Livingstone, 2017; Rogers, 1980, 1983). Misjudging online self-disclosure can lead to over-disclosure (Kim & Dindia, 2011), which can negatively relate to bonding social capital (maintenance of friendships) and bridging social capital (formation of new friendships; Putnam, 1993). Online over-disclosure, and utilising self-presentation behaviours to portray a false self, can also increase the likelihood of engaging in cyberbullying perpetration; over-disclosure and presenting a noticeably altered self may increase visibility to cyberbullies resulting in victimisation (Patchin & Hinduja, 2006). Together, these risks may impair self-esteem (Valkenburg & Peter, 2007).

Alternatively, self-disclosure and self-presentation behaviours may be beneficial. Self-disclosure is required to develop intimacy with friends via bonding social capital, as well as introducing the self in order to bridge social capital (Livingstone, 2014; Steinfield, Ellison & Lampe, 2007). Successful self-presentation behaviours can reap positive feedback, which may enhance self-esteem (Burrow & Rainone, 2017). Children's only social opportunities exist within adult monitored settings (Qvortrup, 2005) and thus they are socially limited in comparison to adolescents and adults (Corsaro, 2015). These online opportunities may be especially beneficial for developing social independence.

However, exploration of these SNS behaviours and their association with the risks and benefits has predominantly been explored with adult and adolescent samples. It is often perceived that children, age under 13 years, do not access SNS due to the age



restrictions (Lenhart, Purcell, Smith & Zickuhr, 2010). In reality, it is easy to bypass age restrictions and create an account with a false age (Livingstone & Brake, 2009; Livingstone, Ólafsson & Staksrud, 2011). Currently, an understanding of children's SNS behaviours and how these may predict risky and beneficial outcomes is limited.

2.1 Online behaviours

Adolescents (aged 13-24; Frech, 2012) are more likely to disclose personal information online than adults (Christofides et al., 2011). Considering children have even less social experience to understand social appropriateness and audience interpretation of disclosures, they may be even more likely to over-disclose (Christofides, Muise & Desmarais, 2011). Online disinhibition, the perceived ease of online communication as a result of controllability of online interactions (Suler, 2004), may facilitate self-disclosure, which may increase the risk of over-disclosure (Schouten, Valkenburg & Peter, 2007); for example, adolescents are more likely to disclose about illegal activities online than within a face-to-face conversation (Peluchette & Karl, 2008). Particularly for those with advanced digital literacy skills, online disinhibition may be elevated by greater control of online interactions (Gradinger, Strohmeier & Spiel, 2015). Children's autonomy is limited offline (Corsaro, 2015) and thus the independence of SNS use, especially for those who access it from their bedrooms, may enhance online disinhibition and encourage disclosure behaviours further (Bryce & Fraser, 2014; Karston, 2005; Lowry et al., 2016; Navarro et al., 2013).

As well as self-disclosure, SNS provide an opportunity to manage impressions via self-presentation behaviours: the strategic manipulation of other's perceptions about the self (Michikyan, Subrahmanyam & Dennis, 2015). During middle childhood, children begin to develop an understanding and recognition of self-presentation behaviours (Watling & Banerjee, 2007a, 2007b; Bennett & Yeeles, 1990). SNS use provides the time and space to craft self-presentation of the real self, the ideal self, the false self to explore, the false self to compare/impress and the false self to deceive (Michikyan, Subrahmanyam & Dennis, 2015), especially for those with digital literacy skills (Besmer & Richter Lipford, 2010). Children may therefore seize the opportunity to explore self-presentation behaviours online.

2.2 Cyberbullying perpetration and victimisation

Experiences of cyberbullying are a risk of engaging with SNS (Hamm et al., 2015). Cyberbullying consists of repeated hostile or aggressive behaviours through the



medium of digital media which is intended to harm the victim (Tokunaga, 2010). Engaging in perpetration behaviours (cyberbullying others) may be facilitated by online disinhibition (Wright, Harper & Wachs, 2019) encourage disclosure (Suler, 2004). Equally, engaging with SNS may enhance visibility to cyberbullies, increasing the likelihood of becoming victimised (Valkenburg & Peter, 2011). Potentially, children's SNS behaviours may predict the likelihood of experiencing these risks.

Online behaviours have been found to predict cyberbullying perpetration behaviours. For instance, self-presentation behaviours may be utilised to present the false self to deceive (e.g., an anonymous profile); the risk of being identified and dealing with a consequence is limited (Hinduja & Patchin, 2007; Michikyan, Subrahmanyam & Dennis, 2015). Further, increased time spent online may facilitate perpetration, especially for the digitally literate cyberbully (Park, Na & Ki, 2014). Disclosing online may also predict cyberbullying perpetration, particularly where the bully feels disinhibited they may share unkind opinions or comments (Seigfried-Spellar & Lankford, 2018). Importantly, previous research has identified that engaging in perpetration is risky for the cyberbully; for example, being a bully is associated with reduced friendships (Sigurdson et al., 2015).

Similar to the online behaviours that predict cyberbullying perpetration, the same behaviours can predict cyberbullying victimisation. Public self-disclosure (i.e., to anyone within a network; Venkatanathan et al., 2014) can be perceived negatively by adult online audiences (Bazarova, 2012). Further, over-disclosing privately to a selected friend or small group of friends is still risky, as the child may be victimised if they misjudge the trustworthiness of the recipient (e.g., the recipient screenshotting and sharing; Ashktorab & Vitak, 2016; Bazarova, 2012; Jaynes, 2019). Amongst adolescents, negative responses to over-disclosure predict friendship difficulties, such as arguments and social exclusion, which can develop into experiencing victimisation (boyd & Ellison, 2007; Hinduja & Patchin, 2007; Subrahmanyam & Greenfield, 2008). Additionally, utilising self-presentation behaviours to present the ideal self or false self to explore or compare/impress may also enhance visibility to cyberbullies, particularly if the disparity is identifiable (e.g., photoshop fails; Dredge, Gleeson & De la Piedad Garcia, 2014).

To date, research considering the risks of SNS use has predominantly focused upon adult or adolescent populations. The amount of time that children spend online is often viewed as the catalyst to experiencing risks (Lee, 2009), but this does not consider



specific behaviours. It remains unclear which behaviours may predict cyberbullying perpetration, victimisation, and poorer self-esteem outcomes amongst child (7-12 years) SNS users.

2.3 Bonding and bridging social capital

Facilitating social connections is a core component of SNS use (Ellison et al., 2011). Maintaining pre-existing friendships (bonding social capital; Putnam, 1993) is the primary use of SNS amongst adolescents (Ahn, 2011) and adults (Phua, Jin & Kim, 2017). SNS also provides a platform for forming new relationships (bridging social capital; Putnam, 1993) through mutual friends or groups and communities (Kaye, Kowart & Quinn, 2017). Considering children's limited social autonomy offline (Corsaro, 2015), it is important to explore whether 7- to 12-year-olds SNS behaviours may be associated with these beneficial outcomes.

SNS allows the user time and space to self-disclose more strategically (Schouten, Valkenburg & Peter, 2007; Cartwright-Hatton, Tschernitz & Gomersall, 2005), which may ease communication especially for the socially inexperienced but digitally literate child (Holloway, Green, & Livingstone, 2013; Schouten, Valkenburg & Peter, 2007). In fact, Peter, Valkenburg and Schouten (2005) identified that early online chat rooms provided adolescents with the opportunity to practise social skills required for bonding social capital. SNS use could therefore provide children with a unique opportunity to bond social capital.

Furthermore, the time and space SNS affords may facilitate the use of impression management via self-presentation behaviours (Schouten, Valkenburg & Peter, 2007). Online, children can explore different self-presentation behaviours with far more creative freedom (Holloway, Green & Livingstone, 2013) and this may benefit bonding social capital. For example, Yang and Brown (2014) found that presenting the real self predicted positive feedback; this may develop into feelings of friendship intimacy thus bonding social capital (Peter, Valkenburg & Schouten, 2005; Valkenburg & Peter, 2011).

SNS also presents opportunities for bridging social capital. Importantly, in order to bridge social capital, one must introduce the self and share their interests, thus an element of self-disclosure is required (Cozby, 1973; Liu & Brown, 2014). There is an abundance of communities on SNS (Johnson & Ambrose, 2006; Mesch & Talmud, 2010; Wright & Li, 2011). Joining these and disclosing within them can foster new



friendships and hobbies or interests (Ito et al., 2008; Reich, 2010; Quinn & Oldmeadow, 2013).

From middle childhood, children are motivated to bridge social capital; peers become increasingly more important for children (Ladd, 1999; Pederson, Vitaro & Barker, 2007). With fewer social spaces than adults, children's opportunities to bridge social capital offline is limited (Corsaro, 2015). Disclosing online provides children the opportunity to cultivate more friendships (Livingstone & Haddon, 2009). Online self-presentation behaviours may also be useful for bridging social capital. The ability to spend time curating the online self may ease the process of initiating a new friendship, which can often be awkward offline (Michikyan, Dennis & Subrahmanyam, 2015); this could be especially beneficial for children who lack social experience (Livingstone & Helsper, 2007). Certainly, when we consider children's social inexperience, practising the introduction and presentation of the self as well as forming new friendships online could be particularly effective for children's social skill development (Livingstone & Helsper, 2007).

As with the risks, the benefits of SNS use have been explored mostly within adolescent and adult samples. Understanding of whether children's online behaviours relate to these benefits remains limited. Importantly, children, aged under 13 years, are engaging with SNS. It is therefore important to explore children's SNS behaviours in order to understand whether these are associated with the beneficial outcomes.

2.4 Self-esteem

Online behaviours may also predict self-esteem. Within a longitudinal study, including older adolescents, Steinfield, Ellison and Lampe (2008) identified that those with low self-esteem experienced enhanced self-esteem over time from using Facebook. Those already low in self-esteem may find SNS use beneficial for expanding their social network by having the time and space to self-disclose with confidence (Blachnis, Przepiorka & Rudnicka, 2016; Ellison, Steinfield & Lampe, 2007; Gonzales & Hancock, 2011; Johnston et al., 2014). More broadly, Valkenburg, Peter and Schouten (2006) highlighted, with participants aged 10-18 years, that self-esteem increased via SNS use for those who received positive feedback, not just for those with initially low self-esteem. For those utilising self-presentation behaviours online, receiving positive feedback could therefore be beneficial upon self-esteem (Yang & Brown, 2016). When



we consider the importance of developing self-esteem during childhood (Robins & Trzesniewski, 2005), SNS use may provide a beneficial opportunity for the iGen.

On the other hand, SNS use may be a detriment to self-esteem. Online over-disclosure behaviours may receive negative feedback from the audience (Bazarova et al., 2014), which can reduce self-esteem (Dupasquier et al., 2020; Rui & Stefanone, 2013). Further, utilising self-presentation behaviours, particularly the ideal or false selves (Grieve, March & Watkinson, 2020), may reduce self-esteem as the user is aware of the disparity between this self and the real self (Meeus, Beullens & Eggermont, 2019; Michikyan, Subrahmanyam & Dennis, 2014). Considering children's lesser social experience compared to adolescents and adults (Christofides, Muise & Desmarais, 2011), they may be at risk of engaging in these behaviours and experiencing impaired self-esteem.

Importantly, influences upon self-esteem during childhood can be associated with long-term mental health (Kwan et al., 2020). Yet, an understanding of children's, under 13 years, SNS behaviours and to what extent they are associated with self-esteem remains limited. Understanding whether children's SNS behaviours are associated with self-esteem outcomes is important for supporting children's development within a digital age.

2.5 Research focus

Online self-disclosure and self-presentation behaviours via SNS use are associated with both risky and beneficial outcomes. Potential risks include engagement with cyberbullying perpetration, experiences of victimisation and reduced self-esteem. Potential benefits include bonding and bridging social capital and enhanced self-esteem.

Additionally, access and individual factors may predict these outcomes further. For example, children who own an SNS account are likely to have more social freedom, such as the privacy of using SNS within their bedroom (Livingstone, 2007) and greater frequency of use (Livingstone & Helsper, 2007). These children may engage in a broader range of behaviours (Staksrud, Ólafsson & Livingstone, 2014) that may impact their exposure to the risky and beneficial outcomes. Furthermore, younger children have more limited social experience and thus their behaviours may expose them to greater risks (Holloway, Green & Livingstone, 2013). Notten and Nikken (2014) also



argue that boys are more likely to engage in behaviours associated with risky outcomes than girls.

In this study we explore the extent to which children's (7-to-12 years old) SNS behaviours (self-disclosure and self-presentation) predict risk and benefit outcomes (cyberbullying perpetration and victimisation, social capital bonding and bridging, and self-esteem). We also consider the access and individual predictors of children's SNS access, location of access, frequency of access, age and gender.

Based upon findings within adult and adolescent literature, it is expected that:

1. greater use of self-disclosure behaviours will positively predict cyberbullying perpetration and cyberbullying victimisation, and bonding and bridging social capital, but will negatively predict self-esteem;
2. greater self-presentation behaviours will positively predict cyberbullying perpetration and cyberbullying victimisation, bonding and bridging social capital and self-esteem.

Importantly, these predictions are based upon mostly adolescent and adult findings. Focusing upon children, under 13 years, will provide a stronger understanding of children's SNS behaviours and to what extent these may predict risky and beneficial outcomes.

3. Method

3.1 Participants

Participants (N=901) were recruited to participate in an online survey from seven schools across the North of England (Sheffield and Stoke-On-Trent) and South of England (Norwich, Essex and Surrey). Due to the aim of this study focusing upon children's SNS use, participants who neither owned any SNS nor accessed SNS via a friend or family member were removed from analyses. Further, participants with a completion rate less than 80% and participants who had not completed the outcome variables (social capital, cyberbullying and self-esteem) were removed from analyses. This resulted in a final sample size of 350. Participants were aged between 7 and 12 years (M= 10.08, SD= 1.13; 52% female) with 71% identifying as White British/Irish; 7.7% as Asian; 5.4% as Mixed; 1% as Black; 15% identified as Other or did not specify.



Ethical approval was granted through the Royal Holloway Research Ethics Committee, and this study was conducted in line with the ethical guidelines of the British Psychological Society. Following ethical approval, schools were contacted by the lead researcher and invited to participate. Schools received information letters for both teachers and parents, following their agreement to participate. Schools were offered the choice of opt-out or opt-in consent; all schools chose to send out parent opt-out consent forms with full information on the research student; parents returned the form to the school if they wished for their child not to be included in the study and this was retained by the school. All children who participated provided informed consent.

3.2 Materials and Measures

We conducted our survey within the Qualtrics platform. The study included six scale measures outlined below. Due to the young age range of participants, visual aids (emojis and progress bars) were provided alongside the Likert points to assist children with lower reading ability, special educational needs (SEN) or (English as an Additional Language; EAL) in completing the survey. Further, given that research in this field tends to focus on adolescents and adults, and not children under 13 years who are prohibited from registering for an account, it was necessary to adapt scales to ensure that they were age appropriate; this is detailed below. To allow for clarity with the younger participants and avoid children ‘averaging’ estimates across platforms, children provided responses for each SNS platform individually (Facebook; Instagram; SnapChat; Other), with the exception of cyberbullying perpetration and victimisation, and self-esteem, which for ethical purposes were measured as overall scores only (Bauman, Cross & Walker, 2013).

3.2.1. SNS access

Participants completed descriptive items regarding SNS ownership, frequency of use, and digital device ownership (Livingstone et al., 2011). Specifically, participants were asked whether they had their own profile with Facebook, Instagram, SnapChat, YouTube or Other. If a participant selected Other they were asked to specify the SNS they used. Participants were also asked whether their mother, father or any other family member owned an SNS account with Facebook, Instagram, SnapChat or YouTube. Regarding digital device ownership, participants were asked whether they owned, whether their parents owned, and whether they had internet connectivity via a mobile phone, an iPad/tablet, a laptop, a desktop computer, a gaming device (e.g., Xbox or



PS4) or a smart TV. A binary score of SNS ownership (0 did not own SNS but accessed from family member, 1 owned an SNS account) was created.

Based upon descriptive items used by Mascheroni and Ólafsson (2013), participants were asked whether they accessed each SNS at home in their bedroom, at home in a communal space, at school, at a friend's house, on-the-go or elsewhere. If a participant selected elsewhere they were asked to specify where this was.

Participants also completed a six-item scale measuring perceived digital literacy. This scale was devised by the lead researcher. Items were devised in relation to the technical aspects of SNS use. Participants were given the brief: 'Click the stars to show me how confident you feel about...'. One item related to profile management "changing your profile to private". Two items related to using SNS settings in general: "finding where the settings are" and "changing the settings". The remaining three items related to contact management: "blocking contacts", "unfriending contacts" and "unfriending someone else". All items were rated on a 5-point Likert scale which was designed on a visual analogue scale of stars (1 to 5). All items were forward coded; mean scores were calculated (range = 1 to 5) with higher numbers indicating greater perceived digital literacy. This scale presents high internal reliability ($\alpha = .94$).

3.2.2. Self-disclosure

Participants completed an adapted version of the Online Self-Disclosure Scale (Schouten, Valkenburg & Peter, 2007) to measure online self-disclosure behaviours. The original scale was conducted with an adult sample and so was adapted for this study to ensure age appropriateness for our participants and applicability to SNS use in general. For example, items in the original scale referring to 'being in love' and 'sex' were removed as these would be inappropriate for our participant's age range. To apply to SNS use, the scale was rephrased from "Imagine a boy/girl whom you regularly communicate with via IM, would you message them about" to ask participants 'In general, would you post about...' to ensure that data regarding public disclosure behaviours were collected.

Participants rated items on a 5-point Likert scale ranging from "I tell nothing about this" to "I tell everything about this" in response to each SNS platform separately (Facebook, Instagram, SnapChat and YouTube). Final scores for each item were selected based upon the SNS each participant rated items most highly on as this indicated the greatest extent of their behaviour and ensured overall self-disclosure



means were calculated across the same number of items. All items were forward coded; mean of the item scores were calculated (range 1 to 5) with higher scores indicating greater disclosure behaviours. The overall scale presents high internal reliability ($\alpha = .81$).

3.2.3. Social capital

To measure participants' social capital behaviours, the Bonding and Maintained Social Capital Scales (Ellison, Steinfield & Lampe, 2007) and the Off to Online Scale (Williams, 2006) were used as a basis for a combined scale measuring both bonding and bridging behaviours. Both of the original scales have previously been used with older adolescents (aged 18-24), therefore to ensure age appropriateness for our participants some items were adapted (adaptions are outlined below).

Bonding

The original bonding social capital scale consisted of ten items (Ellison, Steinfield & Lampe, 2007). Six of these items were removed as they were unrelated to our participants' age group, e.g.: "The people I interact with would be good job references for me". Four items were adapted; for example, "There is someone I can turn to for advice about making important decisions" was adapted to "If I needed help, there is someone online I could turn to for advice." To measure bonding social capital in groups, two additional items were included: "I feel I belong to a group online" and "I feel I am accepted by my groups online".

Participants rated all of these items on a 5-point Likert scale ranging from "I never do this" to "I do this all the time" in response to each SNS platform separately (Facebook, Instagram, SnapChat and YouTube). Final scores for each item were selected based upon the SNS each participant rated items most highly on as this indicated the greatest extent of their behaviour and ensured overall bonding social capital means were calculated across the same number of items. All of these items were forward coded; mean of the item scores (range = 1 to 5) were calculated with higher numbers indicating greater bonding social capital behaviours. This sub-scale presents a high internal reliability ($\alpha = .90$).

Bridging

The original bridging social capital scale consisted of four items (Williams, 2006). Two of these items were unchanged and two were adapted in order to ensure relevance to



SNS use in general. For example, “I have used Facebook to check out someone socially” was adapted to “I have found someone I met in person using SNS”.

Participants rated all of these items on a 5-point Likert scale ranging from “I never do this” to “I do this all the time” in response to each SNS platform separately (Facebook, Instagram, SnapChat and YouTube). Final individual item scores were selected based upon the SNS each participant rated items most highly on as this indicated the greatest extent of their behaviour and ensured overall bridging social capital means were calculated across the same number of items. All items were forward coded; mean of the item scores were calculated (range = 1 to 5) with higher scores indicating greater bridging social capital. This sub-scale presents high internal reliability ($\alpha = .91$).

3.2.4. Self-presentation

Participants completed an adapted version of The SPFBQ (Self-Presentation on Facebook Questionnaire; Michikyan, Subrahmanyam & Dennis, 2014) to measure behaviours depicting online self-presentation techniques: the real self, the ideal self, the false self to explore, the false self to compare/impress and the false self to deceive. This scale was originally created for older adolescents (aged 18-24) and so was adapted to ensure age appropriateness for our participants. The original scale consisted of 17 items. Four items (two for the real self; two for the ideal self) were removed for age appropriateness (e.g., “I have a good sense of what I want in life and using Facebook is a way to express my views and beliefs”). Eight items were unchanged and the remaining six items were adapted for age appropriateness. For example, “I have a good sense of who I am and many of the things I do on my Facebook profile is a way of showing that” was adapted to “I like to show who I am on...”. The adapted scale therefore consisted of 13 items: three items measuring the real self (e.g., ‘Who I am online is similar to who I am offline’), three items measuring the false self to compare/impress (e.g., ‘I compare myself to others on...’), three items measuring the false self to deceive (e.g., ‘I am a completely different person online than I am offline’), two items measuring the false self to explore (e.g., ‘I change my photos to show different sides of who I am’) and two items measuring the ideal self (e.g., ‘I post photos online to show who I would like to be’).

Participants rated each item on a 5-point Likert scale ranging from “not at all true for me” to “always true for me” in response to each SNS platform separately (Facebook,



Instagram, SnapChat and YouTube). Final individual item scores were selected based upon the SNS each participant rated items most highly on as this indicated the greatest extent of their behaviour and ensured overall self-presentation means were calculated across the same number of items. All items were forward coded; mean of the item scores were calculated (range = 1 to 5) with higher scores indicated greater use of self-presentation behaviours. This scale presents high internal reliability ($\alpha = .95$).

3.2.5. Cyberbullying

Participants completed an adapted version of a combination of the Cyberbullying Offending and Victimization scales (Hinduja & Patchin, 2010). The original scale was conducted with older children and adolescents (aged 10-16 years) and referred to internet use in general (e.g., ‘Sent someone an email to make them angry or to make fun of them’); therefore, items were rephrased to relate to SNS use specifically. Participants were provided with the brief: ‘In the past two weeks have you:’ followed by the items presented in either the offending or the victimisation scales (their order of presentation was randomised for all participants).

Offending

This scale was used to measure cyberbullying perpetration behaviours. The original scale consisted of six items. Three items were unchanged and the remaining three items were adapted to relate to SNS use. For example, “Sent someone an email to make them angry or make fun of them” was adapted to “Directly sent someone a message to make them angry or to make fun of them”.

Participants rated items on a 4-point Likert scale ranging from “never” to “more than three times”. Overall mean scores were calculated (range = 1 to 4); higher scores indicated greater cyberbullying perpetration behaviours. All items were forward coded. This sub-scale presents high internal reliability ($\alpha = .94$).

Victimization

This scale consisted of 10 items relating to victimisation. Nine of these items were adapted to relate to SNS use and retained; for example, “Been made fun of in a chat room” was adapted to “Been made fun of online”. One item was removed as it did not apply to this study’s aim (‘Had something posted on your MySpace that made you upset’). A tenth new victimisation item was included, “Receiving an upsetting photo from someone you know”, as the inverse of another item, “Received an upsetting photo



from someone you didn't know', to ensure that responses reflected a range of victimisation experiences and not just those inflicted by strangers.

Participants rated items on a 4-point Likert scale ranging from "never" to "more than three times". Overall mean scores were calculated (range = 1 to 4); higher scores indicated greater cyberbullying victimisation. All items were forward coded. This subscale presents high internal reliability ($\alpha = .81$).

3.2.6. Self-esteem

Participants completed an adapted version of the Rosenberg Self-esteem Scale (Rosenberg, 1965) to measure self-esteem. This scale was originally constructed for an adult sample and so some items were adapted for age appropriateness. The original scale consisted of 10 items. Six items were unchanged and the remaining four items were adapted to be age appropriate. For example, "All in all, I am inclined to feel that I am a failure" was adapted to "I feel like a failure".

Participants rated items on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". Five items were forward coded and five items were reverse coded. Mean item scores were calculated (range = 1 to 5) with higher scores indicating higher self-esteem. This scale presents acceptable internal reliability ($\alpha = .69$).

3.3 Procedure

Participants were seated either within their school's ICT suite, with desktop computers, or within their own classrooms, using iPads or laptops. Participants, in groups of 20-30, were seated in such a way that they could not view others' screens. Children, in groups, were provided with information on the study, followed by them providing consent within Qualtrics if they wished to participate. Children were then assigned a unique identifier, completed the demographic questions, followed by the set of questionnaires that were presented in a randomised order across participants. Participants who were registered as SEN were supported by a member of school staff during the completion of the survey who only read the items aloud to them (note, no outliers were identified during analyses). The survey took approximately 30 minutes to complete and was conducted in a silent environment. Participants were also verbally debriefed once the whole class had completed the survey and provided with the opportunity to ask questions.



4. Results

4.1 Descriptive information

In order to gain an understanding of how children are accessing SNS, we asked participants which devices they and their parents use, when they started using these devices, which SNS they use, how frequently they access these sites and where from (Livingstone et al., 2011; Mascheroni & Ólafsson, 2013).

In total, 280 children identified owning an SNS account: 40% had SnapChat; 37% had Instagram; 7% had Facebook; 42% specified another platform (e.g., Whatsapp, Music.ly, Roblox, Minecraft). Across these participants, 445 accounts were owned; 114 children owned more than one account. In total, 158 children accessed SNS via another individual: 56% via a family member; 47% via their mother; 25% via their father. Tablets were the most owned digital device (80%) and the majority of these had internet connection (95%), and before starting school (36%) was the most reported time of first internet use. Further descriptive information is presented within Table 1.



Table 1. Descriptive information (N = 350) depicting SNS access, frequency of use and location of access.

		n		
		Another's account	SNS	Own SNS account
Frequency of use	Once a week	12		237
	Once a day	11		223
Location of access	Home (not the bedroom)	33		196
	Bedroom	22		179
	Friend's house	12		124
	School	1		15
	On-the-go	8		85

Bivariate Pearson correlations were examined between the main variables to assess for multicollinearity; no issues were identified. Table 2 presents a breakdown of the mean and standard deviation by variable and Bivariate Pearson correlations.



Table 2. Summary of the mean and standard deviation scores per variables and Bivariate Pearson correlations between the main variables, SNS and age.

	M (SD)	Digital literacy	Self-disclosure	Self-presentation	Bonding social capital	Bridging social capital	Cyberbullying perpetration	Cyberbullying victimisation	Self-esteem
Age	10.08 (1.13)	0.27***	0.03	-0.04	0.09	-0.01	-0.09	-0.05	-0.09**
Digital literacy	3.31 (1.76)		0.08	0.23***	0.32***	0.31***	0.16	-0.07	0.02
Self-disclosure	1.76 (1.26)			0.24***	0.12*	0.24***	0.28***	0.08	0.12***
Self-presentation	1.72 (1.25)				0.40***	0.47***	0.25	0.02	0.20***
Bonding social capital	2.63 (1.18)					0.50***	0.21*	-0.04	0.01
Bridging social capital	1.63 (0.94)						0.21*	0.13***	0.04
Cyberbullying perpetration	1.59 (0.79)							-0.03	0.21***
Cyberbullying victimisation	1.22 (0.65)								0.26***



Self-esteem 2.64
 (1.40)

* $p < .05$; ** $p < .01$; *** $p < .001$



4.2 Main analyses

To assess our research aim of children's SNS behaviours and how these predict outcomes that are considered risks and benefits, we completed a series of linear mixed effect models. SNS ownership was included as the random intercept for each model using binary categories of 0 (access via another's account) or 1 (access via own account) in order to measure whether ownership of a profile had an influence upon the risks and benefits.

Five linear mixed effects models were completed using the lme4 packages in R (Bates et al., 2015) as well as the lmerTest package to calculate significance in accordance with Satterthwaite's method (Kuznetsova, Brockhoff, & Christensen, 2017). Fixed effects of age, gender (binary: 0 male, 1 female), frequency of SNS use (binary: 0 weekly, 1 daily), private access (in the bedroom; binary: 0 no, 1 yes), public access (not in the bedroom; binary: 0 no, 1 yes) and digital literacy scores were entered within each model as these theoretically capture potential descriptive predictors discussed within current literature. Disclosure and self-presentation behaviours were entered as fixed effects within each model as these behaviours may lead to the risky and beneficial outcomes. Social capital bonding and bridging, cyberbullying perpetration and victimisation, and self-esteem scores were each an outcome variable as these capture the current known SNS risks and benefits within adult and adolescent literature. A summary of the analysis is presented within Table 4.



Table 4. Summary of the linear mixed effect models including descriptors and self-disclosure and self-presentation behaviours as predictors and outcome variables of social capital bonding and bridging, cyberbullying perpetration and victimisation, and self-esteem.

	Social capital bonding			Social capital bridging			Cyberbullying perpetration			Cyberbullying victimisation			Self-esteem		
	Estimate (β)	SE	t	Estimate (β)	SE	t	Estimate (β)	SE	t	Estimate (β)	SE	t	Estimate (β)	SE	t
Intercept															
(SNS ownership)	1.50*	0.72	2.09	0.46	0.58	0.79	0.44	0.61	0.72	1.06***	0.88	5.64	1.97***	0.46	4.31
Age	0.02	0.07	0.31	-0.01	0.06	-0.24	-0.05	0.06	0.41	0.01	0.02	0.74	0.02	0.04	0.45
Gender	-0.29*	0.13	-2.15	-0.12	0.12	-1.01	-0.14	0.13	-1.09	-0.11	0.04	-0.35	0.05	0.09	0.55
Frequency of SNS use	0.08	0.16	0.47	-0.14	0.13	-1.06	-0.001	0.14	-0.01	-0.11	0.04	-0.29	-0.12	0.10	-1.22
Private access	0.40***	0.08	5.05	0.34***	0.07	4.93	0.05	0.07	0.71	0.05*	0.02	2.15	-0.03	0.05	-0.62
Public access	-0.01	0.03	-0.42	-0.002	0.03	-0.09	0.06**	0.02	2.69	<.001	<.001	-0.12	0.02	0.02	1.09
Digital literacy scores	0.12*	0.05	2.30	0.10*	0.05	2.22	-0.01	0.05	-0.25	-0.03*	0.01	-2.32	0.01	0.04	0.31
Self-disclosure	0.06	0.05	0.89	0.12*	0.06	2.06	0.20**	0.07	2.73	0.06**	0.02	2.96	0.05	0.05	1.13



Self- presentation	0.25**	0.08	3.26	0.35***	0.07	5.14	0.02	0.07	0.37	<.001	0.02	-0.05	0.18*	3.50	0.05
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*p<.05; **p<.01;***p<.001; note: binary codes used for gender (0 male, 1 female), frequency of use (0 weekly, 1 daily) and private and public access (0 no, 1 yes); the random intercept (SNS ownership) accounted for 8.4% of the variance in social capital model, <1% in cyberbullying victimisation model, and <1% in self-esteem model; the random intercept was not significant within the cyberbullying perpetration model.



4.1.1. Summary of findings

Higher cyberbullying perpetration was associated with higher levels of self-disclosure, $\beta = 0.20$, $t(252.00) = 2.73$, $p < .01$, and when accessed SNS in a public space, $\beta = 0.06$, $t(252.00) = 2.69$, $p < .01$. Higher cyberbullying victimisation was associated with higher levels of self-disclosure, $\beta = 0.06$, $t(252.00) = 2.96$, $p < .01$, and when accessed SNS in a private space, $\beta = 0.05$, $t(252.00) = 2.15$, $p < .05$, and when digital literacy was weaker, $\beta = -0.03$, $t(252.00) = -2.32$, $p < .05$.

Higher bonding social capital was associated with higher levels of self-presentation ($\beta = 0.25$, $t(251.00) = 3.26$, $p < .01$), with males ($\beta = -0.29$, $t(251.87) = -2.15$, $p < .05$), private access ($\beta = 0.40$, $t(251.03) = 5.05$, $p < .001$) and higher digital literacy ($\beta = 0.12$, $t(251.59) = 2.30$, $p < .05$). Higher bridging social capital was associated with higher levels of self-disclosure ($\beta = 0.12$, $t(228.99) = 2.06$, $p < .05$) and self-presentation ($\beta = 0.35$, $t(228.37) = 5.14$, $p < .001$) as well as private access ($\beta = 0.34$, $t(228.34) = 4.93$, $p < .001$) and higher digital literacy ($\beta = 0.10$, $t(228.93) = 2.22$, $p < .05$).

4.1.2. Supplementary findings

Within our findings, public access predicted cyberbullying perpetration. Scores for public access were calculated by averaging responses to SNS use outside of the bedroom, including at home in another room; at a friend's house; at school; on-the-go; elsewhere (Mascheroni & Ólafsson, 2013). In order to break this down and understand specifically where children were more likely to engage in cyberbullying perpetration, a linear regression was conducted using the lme4 package in R (Bates et al., 2015) as well as the lmerTest package to calculate significance in accordance with Satterthwaite's method (Kuznetsova, Brockhoff, & Christensen, 2017). Access from a friend's house positively predicted cyberbullying perpetration, $\beta = 0.14$, $t(343.00) = 2.13$, $p < .05$.

Also, self-presentation behaviours predicted both bonding and bridging social capital. Self-presentation scores were calculated by averaging responses to the real self; ideal self; false self to explore; false self to compare/impress; false self to deceive (Michikyan, Subrahmanyam & Dennis, 2015). In order to understand which of these self-presentation behaviours predicted bonding and bridging social capital specifically, a linear regression was conducted using the lme4 package in R (Bates et al., 2015) as well as the lmerTest package to calculate significance in accordance with



Satterthwaite's method (Kuznetsova, Brockhoff, & Christensen, 2017). Presentation of the false self to deceive negatively predicted bonding social capital, $\beta = -0.41$, $t(343.00) = -3.09$, $p < .001$. Presentation of the real self positively predicted both bonding social capital, $\beta = 0.37$, $t(343.00) = 2.50$, $p < .05$, and bridging social capital, $\beta = 0.32$, $t(343.00) = 2.50$, $p < .05$.

Further, self-presentation behaviours also predicted self-esteem. To explore this, a linear regression was conducted using the lme4 package in R (Bates et al., 2015) as well as the lmerTest package to calculate significance in accordance with Satterthwaite's method (Kuznetsova, Brockhoff, & Christensen, 2017). Interestingly, the intercept was significant, $\beta = 2.30$, $t(343.00) = 29.02$, $p < .001$, however no specific facet of the self predicted self-esteem scores.



Table 6. Summary of the linear regression model including each facet of self-presentation behaviour as the predictors and bonding and bridging social capital as the outcome variables.

	Social capital bonding			Social capital bridging		
	Estimate (β)	SE	t	Estimate (β)	SE	t
Intercept	2.53	0.31	8.27	1.09*	0.16	6.80
Real self	0.37*	0.15	2.50	0.32*	0.13	2.50
Ideal self	0.21	0.13	1.55	-0.07	0.11	-0.65
False self to explore	0.28	0.15	1.95	0.15	0.12	1.21
False self to compare/impress	-0.24	0.17	-1.42	0.27	0.15	1.74
False self to deceive	-0.41**	0.13	-3.09	-0.02	0.11	-1.96

* $p < .05$; ** $p < .01$; *** $p < .001$.



5. Discussion

This study is one of the first to explore children's (7- to 12-year-olds) SNS behaviours and to what extent they predict outcomes that are considered risks and benefits. Importantly, despite the age restrictions of SNS, our findings show that children are accessing SNS and their online behaviours are associated with both the risk and benefit outcomes. Online self-disclosure behaviours predicted the benefits of bridging social capital, but also a greater likelihood to engage in cyberbullying perpetration behaviours and experience victimisation. Self-presentation behaviours positively predicted the benefits of both bonding and bridging social capital, and self-esteem. Our findings also highlight that males engage in bonding social capital online more so than females.

As well as the main predictors focused upon within this study, our findings highlight that access and children's individual characteristics are associated with risk and benefit outcomes. Owning an SNS profile and accessing it privately predicted the beneficial outcomes of both bonding and bridging social capital as well as greater self-esteem. Further, greater digital literacy skills predict the beneficial outcomes of both bonding and bridging social capital. SNS may therefore provide children with an opportunity to independently socialise (Livingstone & Haddon, 2009) and develop their digital literacy skills (Livingstone, 2014); where successful, this may benefit self-esteem. As well as this, despite claims that time spent on SNS is risky (Park, Na & Kim, 2014), time spent on SNS (specifically daily and weekly) did not predict the risks within this study; these findings are increasingly supported within literature (Kardefelt-Winther, Reese & Livingstone, 2020).

Interestingly, public access predicts the likelihood to engage in cyberbullying perpetration. Within adolescent literature, it is widely reported that the presence of peers encourages cyberbullying perpetration (Brody & Vangelini, 2016; Fisl, Sharkow & Quandt, 2013; Shim & Shin, 2016), as well as many other antisocial behaviours (Nathanson, 2001). Allowing children online autonomy may therefore may result in partaking in cyberbullying perpetration (Livingstone & Helsper, 2007).

Further, children's online autonomy is intertwined with cyberbullying victimisation (Hinduja & Patchin, 2008, 2010; Smith et al., 2008). SNS ownership and private access predict greater levels of cyberbullying victimisation. It may be that children's online behaviour when they access SNS via a family member's account is monitored by family (Appel et al., 2012), which may result in a lower risk of over-



disclosure (Lee & Chae, 2012) and subsequent visibility to cyberbullies (Mesch, 2018). Our findings cannot determine this, so it would be interesting to consider this in future research.

Further, we see that 7- to 12-year-olds' SNS use and behaviours are related to identified benefits of using SNS (e.g., bonding and bridging social capital; Ahn, 2012). We found that males engaged in bonding social capital behaviours more so than females. In relation to online friendships, it has been reported that females disclose more to their friends (Lenhart et al., 2007; Schouten et al., 2007); previous research, however, rarely considers the nuanced differences of bonding and bridging social capital online. Males typically self-disclose less to friends and view shared activity as an indicator of friendship (Philippsen, 1999; Rose & Rudolph, 2007; Winstead, 1986). Perhaps, males may engage in shared activities such as online games and SNS challenges in order to bond social capital. Providing boys with the privacy to bond online may therefore be important for developing friendship intimacy.

5.1 Cyberbullying perpetration and victimisation

Disclosing online can expose children to cyberbullying perpetration and victimisation. Online self-disclosure may encourage perpetration, particularly where the user feels disinhibited by the online environment (Bartlett & Helmstetter, 2019; Suler, 2004; Wang & Ngai, 2020; Wolak et al., 2008). In our study, we found that 7- to 12-year-olds who disclosed more details about the self were more likely to engage in cyberbullying perpetration. In fact, Dowell et al. (2009) found that those who engaged in self-disclosure behaviours online were subsequently more likely to post inappropriate content, harass and embarrass others. Importantly, where children engage in self-disclosure behaviours to engage in cyberbullying perpetration, they are exposed to potentially wider risks, such as impaired mental health (Alim, 2017; Kota & Selkie, 2018).

Equally, online over-disclosure can increase visibility to cyberbullies resulting in victimisation (Peluchette et al., 2015; Schacter, Greenberg & Juvonen, 2016). Within adolescent samples, research has identified that self-disclosure, with the intention of social capital goals, can easily be misjudged and result in over-disclosure (Bryce & Fraser, 2014; Valkenburg & Peter, 2009). Festl and Quant (2016) identified that this is a predictor of victimisation. Further still, Kwan and Skoric (2013) highlight that disclosing online in order to bridge social capital (particularly with strangers) exposes



adolescents to victimisation even further. Our findings extend this, our results identified that children's self-disclosure behaviours predict bridging social capital; in an attempt to form new friendships, children may be misjudging their disclosure and subsequently increasing their visibility to cyberbullies. Further still, we know that children are less socially experienced than adolescents (Livingstone & Helsper, 2007), thus the likelihood of misjudging disclosure and engaging in over-disclosure behaviours may be even greater for children. The long-term relationship between these experiences and mental health and wellbeing can be harmful (Kwan et al., 2020). Educating children about safe self-disclosure behaviours may be particularly important in ensuring that the benefits of bridging social capital are reaped, without experiencing the risks of victimisation.

1.1. Bonding and bridging social capital

Engaging with SNS can be beneficial for bonding and bridging social capital (Ahn, 2012; Ellison, Steinfield & Lampe, 2008). Our findings highlight that children, aged 7-to-12 years, who engage with SNS within a private space are accessing bonding and bridging social capital. Children lack social autonomy (Corsaro, 2015) and thus having access to SNS may provide them with the opportunity for social independence and impression management, which may benefit self-esteem (Best, Manktelow & Taylor, 2014; Steinfield, Ellison & Lampe, 2008) and long-term positive mental health outcomes (e.g., confidence; Best, Manktelow & Taylor, 2014).

Our findings suggest that online self-disclosure behaviours predict bridging social capital, albeit not bonding social capital. Interestingly, with a sample of emerging adults, Liu and Brown (2014) presented similar findings, although they did find a predictive relationship between self-disclosure and bonding social capital when mediated by positive feedback. Online self-disclosure is evaluated by both the audience (Bazarova, 2012) and the individual who discloses (Makse & Young, 2013); positive evaluation is reflected within positive feedback and this is an indicator of friendship quality and subsequently bonded social capital (Jang & Yoo, 2009). Based upon this, it may be the addition of the positive comments which reaps the benefit of bonding social capital rather than self-disclose behaviours alone.

In alignment with our findings, Liu and Brown (2013) identified that self-disclosure behaviours predicted bridging social capital. In order to form any type of relationship, some level of disclosure is required to share basic personal information. Particularly for the digitally literate child who lacks opportunity for social



independence (Corsaro, 2015), self-disclosing online may be beneficial for developing their social network. Although self-disclosure did not predict self-esteem, we know that bridging social capital can be positively associated with wellbeing (e.g., confidence, feelings of connectedness; Phua, Jin & Kim, 2017; Trepte, Reinecke & Juechems, 2012).

Our findings also highlight that self-presentation behaviours are associated with benefit outcomes. During middle childhood, children become increasingly aware of self-presentation behaviours for managing impressions of others (Watling & Banerjee, 2007). Online self-presentation behaviours are more creative and easier to manipulate than offline due to the many functions of SNS and the time the user has to craft the online self (Michikyan, Subrahmanyam & Dennis, 2015). This can result in the presentation of the real self, the ideal self, the false self to explore, the false self to compare/impress and the false self to deceive (Michikyan, Subrahmanyam & Dennis, 2015). Particularly for children, who are increasingly exploring self-presentation behaviours (Watling & Banerjee, 2007), engaging in online self-presentation may reap beneficial outcomes.

Consistent with our hypotheses, we found that self-presentation behaviours positively predicted both bonding and bridging social capital outcomes. Interestingly, our supplementary findings highlight that particular facets of the self predict these outcomes. For example, the real self is beneficial for both bonding and bridging social capital. In order to strengthen pre-existing relationships, one must present the real self to establish intimacy (Bareket-Bojmel, Moran & Shahar, 2016; Garcia-Rapp, 2017). Further still, in order to introduce the self and form a new friendship, presentation of the real self is also required (Liu & Brown, 2014; Quinn & Oldmeadow, 2013). We also know that children become increasingly aware of other's self-presentation behaviours and the motivations behind these (Banerjee, Heyman & Lee, 2020; Nesbit & Watling, 2019; Rapp, 2017; Watling, 2019). Presentation of the real self is therefore important in successfully bridging and bonding social capital. In fact, our findings support this further as it appears that children are able to identify inauthentic self-presentation behaviours of others: those who present the false self to deceive are less likely to bond social capital. Presenting the false self to deceive is often fuelled by antisocial goals (Hart et al., 2017) and thus will not enhance characteristics required for bonding social capital (e.g., trust, loyalty; Phua, Jin & Kim, 2017; Poortinga, 2006). Our findings therefore emphasise that children may experience the benefits of bonding



social capital online by presenting the real self and suggest that children are developing the skills to interpret the online self-presentation behaviours of others; the latter would be interesting to investigate further.

1.2. Self-esteem

As we expected, self-presentation behaviours positively predicted self-esteem; albeit a relationship between a particular facet of the self and self-esteem was not found. Holloway, Green and Livingstone (2013) contextualise the online environment as a play space for children, aged under 13 years. When we consider the many SNS functions (e.g., likes, filters, stickers, interactive polls, etc) and how visually stimulated children are (Hitch & Halliday, 1988; Nardini, Bedford & Mareschal, 2010), SNS may present a very inviting play space. In terms of self-presentation behaviours, children may explore a range of these facets, orientated through play. In fact, Subrahmanyam and Šmahel (2011) found that adolescents explored with different facets of the self more generally online. For example, the real self was explored via blogs, whilst the false self to explore was explored via gamified avatars in online video games. In comparison to these findings, perhaps children, aged 7-to-12, are more inclined to explore the self via play; this would be interesting to explore further.

Those who owned an SNS profile reported higher levels of self-esteem. Ellison, Steinfield and Lampe (2008) found that SNS use had a positive impact upon young adults' self-esteem, particularly for those who already had low self-esteem. We know that the social autonomy of owning SNS benefits adolescents' self-esteem (Valkenburg, Peter & Schouten, 2006), so perhaps for children, aged 7-to-12 years, who are further limited in social autonomy (Corsaro, 2015), this association is even greater.

1.3. Limitations and future research

This study does contain some limitations. Due to the younger age range (7-to-12 years) of our participants, the measures included required adaptation to ensure for age appropriateness. It is important to investigate younger children's online behaviours; ensuring that measures accurately capture these is vital in ensuring validity of findings. Importantly, our measures presented high internal reliability; it would be useful for future research to replicate these measures.

This study explores children's (7-to-12 years) SNS use within the context of notions that have emerged within adolescent and adult literature; this is due to the limited literature addressing this age range's SNS use. As a result, although we have investigated the association between these behaviours and the risks and beneficial



outcomes, these risks and benefits may not reflect those which children are actually experiencing (Anderson & Hanson, 2009; Darbyshire & MacDougall, 2005). In response to this, it would be important to conduct qualitative research with this age group, which allows for the emergence of themes which are directly applicable to children's experiences of SNS use.

This study is unique in its focus upon the iGen's (7-to-12 years) SNS behaviours. Importantly, our findings consider both the risks and benefits in order to understand the full extent of children's online behaviours. Our findings extend previous research regarding cyberbullying experiences. Disclosing online may enhance the likelihood to engage in cyberbullying perpetration as well as experience victimisation. Our findings also highlight that in order to engage with SNS and access the benefits of bonding and bridging social capital self-disclosure of the real self is required. An understanding of how to disclose appropriately online is therefore required in order for children to access the benefits of social capital, without encountering the risks of cyberbullying.

Together, our findings suggest that children's online behaviours are associated with both risky and beneficial outcomes. Future research should build upon these findings by investigating the benefits, as well as the risks, of children's SNS use and not avoiding this due to age restrictions. Our findings did not identify a relationship between self-disclosure or self-presentation behaviours and self-esteem, yet much literature does consider the relationship between SNS use and wider mental health (Kwan et al., 2020). This may be as a result of the cross-sectional design of this study failing to account for the nuances of online behaviours and feedback over time, which may shape self-esteem (Valkenburg, Koutamanis & Vossen, 2017). In order to explore this relationship further, it would be interesting for future research to consider the longitudinal association between SNS behaviours and self-esteem.

1.4. Conclusion

Our study is unique in its focus upon children's SNS behaviours and to what extent this predicts their access to outcomes which are associated with risks and benefits. Crucially, these findings highlight that younger children (7-to-12 years) are accessing SNS and that their behaviours are associated with risky and beneficial outcomes. Disclosing online may enhance the likelihood of engaging in cyberbullying perpetration behaviours and experiencing victimisation. Yet, disclosing online, especially presenting the real self, may enhance access to bonding and bridging social capital. It is important for parents, practitioners and policymakers to acknowledge this



and to educate children about the risks, but also about the benefits, in order to empower children within a digital age.



Chapter 5

“The world we live in now”: A qualitative investigation into parents’, teachers’ and children’s perceptions of social networking site use.

1. Abstract

Younger children are increasingly using social networking sites (SNS; Ofcom, 2019). In doing so, they may experience both benefits (e.g., enhanced social capital) and risks (e.g., cyberbullying). Parents and teachers play an important role in shaping children’s perceptions. Within a digital age, this is facilitated via internet mediation behaviours (Livingstone, 2017). An understanding of both children’s and adults’ perceptions of the risks and benefits of SNS use within the home and school contexts is limited within current literature. This study explored parents’, teachers’ and children’s perceptions of the risks and benefits of SNS use and how adults’ internet mediation behaviours were associated with this. A sample of 42 participants, including 13 parents (aged 28-48), 14 teachers (aged 26-54) and 15 children (aged 7-12), participated in one-to-one semi-structured interviews exploring SNS use and perceptions of the risks and benefits, as well as internet mediation behaviours with adult participants. Findings highlight bonding social capital as the main benefit. Children recognise stranger danger as a risk, and they are using privacy settings to mitigate this; importantly, they are failing to perceive the wider risks within their online networks (e.g., cyberbullying). Parents’ and teachers’ restrictive internet mediation behaviours are informed by perceptions of stranger danger, safeguarding and children lacking online responsibility. Findings highlight the importance of shifting guidance from stranger danger to discussing the wider SNS risks, as well as the benefits; it is crucial for greater financial investment and policy to overcome barriers to e-safety education.

Keywords

Children, adults, social media, benefits, risks.



2. Introduction

Immersed within a digital society since birth, the iGeneration (iGen; born from 2010 onwards; Rosen, 2010) are increasingly participating online (Turner, 2015). Despite the age restrictions of SNS averaging 13 years, 4% of 5-7 year-olds and 21% of 8-11 year-olds currently own an SNS profile (Ofcom, 2019). Engaging with SNS can enhance social capital and digital literacy, increasing connectivity and online skills; these can be positively associated with self-esteem (Steinfeld, Ellison & Lampe, 2008). Experiences with cyberbullying and contact from strangers, however, are also enhanced via SNS which can have long-term detrimental impacts upon mental health. Adults are particularly concerned about these risks (Ofcom, 2019; Smith & Livingstone, 2017).

Adults manifest their concerns within their mediational involvement (Lee & Chae, 2012; Livingstone, Davidson, Bryce, Batool, Haughton & Nandi, 2017). 'Mediation' is defined as the management of children's media use via strategies (e.g., restricting use), monitoring (e.g., observational software; Ellis, 2020) and communication (e.g., fostering open discussions; Austin, 1993; Kerr & Stattin, 2000; Livingstone & Helsper, 2008; Nathanson, 1999). This notion is commonly referred to in terms of parents, yet teachers also present an important mediator within children's lives (Shin & Lwin, 2016). Children report being informed of internet safety by both their parents and teachers equally, highlighting the mediating role that both parents and teachers play within children's online awareness (Ofcom, 2019).

Research which prioritises children's (under 13 years old) perceptions of SNS use remains limited within current literature. Due to the age restrictions of SNS, it may be assumed that the iGen are not accessing it and thus literature prioritising this age group is limited. Exploring both parents' and teachers' perceptions of SNS is important in understanding what influences their internet mediation behaviours, as well as how these shape children's access to, and perceptions of, the risks and benefits of SNS use.

2.1 Benefits and risks of SNS use

In order to engage with SNS, the user is required to disclose information (English & John, 2013). The success of disclosure is determined by its appropriateness (Lin & Utz, 2017). Appropriateness is judged in terms of the content of the disclosure and the nature of the audience (disclosure personalism framework; Bazarova, 2012). For example, intimate information would be deemed inappropriate by a public audience, whereas the same information disclosed privately (e.g., via a direct message) to a close friend would



be deemed appropriate (Bazarova, 2012). The inappropriate disclosure (over-disclosure) could lead to negative feedback and reputation impairment; these may relate to low self-esteem (Baruh & Cemalcilar, 2015; Bryce & Fraser, 2014; Bryce & Klang, 2009). The appropriate disclosure, however, could benefit social capital, enhancing self-esteem (Allen et al., 2014; Lin, Levordashka & Utz, 2016; Valkenburg, Peter & Schouten, 2006). Online disclosure behaviours are therefore a catalyst to the risks and benefits of SNS use.

Adults are typically more successful at managing disclosure online due to greater life experience (Hoofnagle, King, Li, & Turow, 2010; Madden, 2012; Zelazo, 2004). Children, on the other hand, are less aware of over-disclosure risks which may result in poor disclosure decision-making (Lange, 2016; Livingstone, Haddon, Görzig & Ólafsson, 2011; Runions, Shapka, Dooley & Modecki, 2013; Zelazo, 2004). For example, children are more likely to share passwords and experience cyberbullying (Meter & Bauman, 2015). On the other hand, the iGen may be skilled at managing their online disclosure (Ofcom, 2019). Thus, they may be experiencing the benefits of SNS use more readily than the risks.

Online disclosure can effect social capital: the maintenance of social networks (Putnam, 2004). Bridging (forming) and bonding (strengthening) friendships can be positively associated with self-esteem, social skills, and wellbeing (Ellison, Steinfield, & Lampe, 2007; Sherman & Cohen, 2006; Valkenburg & Peter, 2009). Using SNS for social capital goals, however, can increase over-disclosure (Acquisti & Gross, 2006; Ellison et al., 2011). Over-disclosing online can increase risks of friendship difficulties due to misinterpreted communication (Meter & Bauman, 2015; Mishna, Saini & Solomon, 2009). Reliance upon SNS for social capital can also result in withdrawal from real-world interactions, reducing wellbeing (Scott, Valley & Simecka, 2017; Shapka, 2019). Social capital is particularly important during development (Leonard, 2005) and thus the SNS risks and benefits associated with social capital may intensify during childhood.

Online disclosure may also be associated with exploration of the self. Self-concept considers the way in which we perceive our past, current and future selves within the context of our own beliefs and identity (Altheide, 2000; Goffman, 1978). Importantly, our self-concept is shaped by our interactions, especially feedback from others (Fullwood, James & Chen-Wilson, 2016; Goffman, 1978; Rettie, 2009). Children begin to develop a sense of self-concept from an early age through trialling



out different sides of the self and evaluating both internal (how they feel) and external feedback (Burns, 1979; Goffman, 1978). Importantly, the iGen are able to explore self-concept more strategically through online self-presentation (Calvert et al., 2003; Rosenberg & Egbert, 2011). Self-presentation techniques are based upon self-concept, conveying information about the self in order to manage impressions of others (Baumeister & Hutton, 1987). The disinhibition of SNS use allows children to trial out the real self, ideal self or facets of the false self (impress/compare; deceive; explore; Donath & Boyd, 2004; Hall & Pennington, 2013) with more controllability than offline (Schouten, Valkenburg & Peter, 2007).

Receiving positive feedback for the real self or ideal self can enhance self-esteem, affirming self-concept or encouraging pursuit of further idealistic goals (Yang, Holden & Carter, 2017). On the other hand, positive feedback can be detrimental upon self-esteem, particularly if a great difference exists between self-presentation and the real self (Jackson & Luchner, 2018).

Developing a particular presence online can make children more identifiable to cyberbullies, subsequently becoming a targeted victim (Dredge, Gleeson & de la Piedad Garcia, 2014; Park, Na & Kim, 2014). Friendship difficulties, as a result of misinterpreted communication online, can result in cyberbullying if left unresolved (Beran & Li, 2008). Also, trialling out the ideal self or a noticeably false self can expose children to ridicule from peers who may identify the inauthenticity (Dredge, Gleeson & de la Piedad Garcia, 2014). The long-term adverse mental health impacts of cyberbullying are widely reported within literature (Cowie, 2013; Smith, 2012; Smith, Mahdavi, Carvalho & Tippett, 2006).

SNS present opportunities for the iGen that were unavailable to previous generations. The iGen, limited in their offline social autonomy, may be empowered by these opportunities. Yet, SNS presents the iGen with many risks. Literature considering the benefits and risks has predominantly focused upon adolescent or adult groups, rather than children under 13 years. In this study we explore children's (under 13 years) perceptions of risks and benefits of SNS use; further, to gain an understanding of how children may come to perceive risks and benefits of SNS use in a certain way, we explore the mediating role of parents and teachers in developing a broader contextual understanding of SNS (Livingstone, 2004; Kuss & Griffiths, 2011).



2.2 Parents

Parental mediation is exhibited through behaviours shaped by a particular parenting style (Baumrind, 1991; Grusec & Davidov, 2010). The choice of parenting style is driven by the goals of the parent embedded within their perceptions of that scenario (Austin, 1993; Baumrind, 1991; Darling & Steinberg, 1993; Green, Walker, Hoover-Dempsey & Sandler, 2007; Lee, 2013). Parenting styles are adapting to the digital age: internet parenting styles (Livingstone, 2017).

Internet parenting styles comprise of enabling mediation (ultimate goal of enhancing access to opportunities and subsequent benefits, i.e., their child using the internet independently and proficiently) and restrictive mediation (ultimate goal of limiting access to risks, i.e., no internet use to prevent contact from strangers; Livingstone, 2017). Behaviours based upon restrictive mediation styles are the most prominent within the digital age, and include: interaction restrictions, monitoring, access restrictions, technical mediation (De Morentin, Cortés, Medrano & Apodaca, 2014; Kirwil, 2009; Livingstone, 2017). Examples of these behaviours involve denying or restricting access to SNS, limiting time online, checking history and filtering/blocking via the use of software. Behaviours based upon enabling internet mediation styles include supervision/co-use (e.g., a parent sharing an SNS account with their child) and interpretive internet mediation (e.g., openly discussing SNS use; Livingstone, 2017). Internet parenting styles inform family digital literacy practices: the interaction between children and parents to shape technological involvement in the home (Plowman, Stevenson, Stephen & McPake, 2012; Sefton-Green, Marsh, Erstad & Flewitt, 2016). For example, the use of enabling internet mediation behaviours may foster a family digital literacy environment incorporating SNS use (Zaman, Nouwen, Vanattenhoven, Ferrerre & Looy, 2016). This could be personified by the family who regularly communicate via SNS and openly discuss its use, for the children of this family this could increase their access to the benefits.

Mediation behaviours, based upon internet parenting styles, may enhance or reduce children's access to SNS (Livingstone, 2007; Livingstone & Helsper, 2008). For example, restrictive internet mediation behaviours predict less time spent online by children (younger children in particular; Lee, 2013; Symons, Ponnet, Walrave & Heirman, 2017). By spending less time online, specifically in terms of using SNS, children's exposure to risks reduces (Lee, 2013). This means that their access to the



opportunities and benefits will also reduce (Livingstone, 2017). Enabling internet mediation increases children's access to the opportunities and benefits (Livingstone, 2017). Yet, this also exposes children to greater risk (Livingstone, 2017). By either enhancing or limiting access to SNS, parental internet mediation behaviours also shape children's perceptions of the risks and benefits (Nikken & Jansz, 2014; Plowman, Stevenson, Stephen & McPake, 2012). Restrictive internet mediation behaviours, in particular, positively predict children's negative perceptions of SNS use (Lee, 2013). Whereas, enabling internet mediation behaviours, such as co-use, are often adopted by parents with positive perceptions of SNS use and thus may enhance children's positive perceptions (Livingstone & Helsper, 2008; Nikken & Jansz, 2006). Importantly, this highlights that parental perceptions, goals, styles and ultimately, their internet mediation behaviours, relate to their child's access and perceptions of SNS use.

Research considering internet parenting styles and how these relate to children's perceptions of SNS use is scarce. Developing an understanding of how internet parenting styles influence the iGen's perceptions of SNS use is crucial in exploring their access to the risks and benefits.

2.3 Teachers

Children recall their teachers' guidance regarding online use equally to that of their parents (Ofcom, 2019); this emphasises the importance of receiving e-safety education in school. Within the UK, teachers mediate children's SNS use predominantly via e-safety education, which focuses upon staying safe online more generally, as opposed to enhancing digital literacy skills. E-safety lessons vary hugely between schools and have been widely criticised (Barnard-Wills, 2012; Grey, 2011; Shipton, 2011). E-safety is often not prioritized in comparison with more traditional subjects, such as Literacy and Numeracy (Woollard, 2008). E-safety also requires technical resources (e.g., laptops and iPads) which are limited in many school settings (Alkhatabi, 2017). These barriers to e-safety education impact teachers' ability to deliver these lessons. Subsequently, this may relate to children's understanding of the risks and benefits.

As well as these practical hindrances, perceptions of teachers themselves may further influence the delivery of e-safety education. Teacher perceptions of SNS use are often related to over-disclosure concerns about blurring the line between the personal and professional spheres (Sharples, Graber, Harrison & Logan, 2009; de Zwart, Henderson, Phillips & Lindsay, 2011). Pupils trying to connect with a teacher,



for example, presents a serious safeguarding breach which can result in disciplinary action. These concerns may be heightened with primary-aged children, who are perceived as more vulnerable (Brown, 2015; Sharples, Graber, Harrison & Logan, 2009). Teachers also express concerns of losing credibility, particularly if parents try to connect with them (de Zwart, Henderson, Phillips & Lindsay, 2011). This is increasingly likely within UK primary school settings where children have one teacher for at least a year; parents may develop a closer relationship with the teacher and misjudge the nature of this relationship (O'Connor, 2001; O'Connor & McCartney, 2006).

Teachers often report limited understanding of SNS use resulting in their reluctance to teach e-safety (Sharples, Graber, Harrison & Logan, 2009). In particular, teachers may avoid focusing upon SNS within e-safety education, thus limiting children's learning opportunities (Shipton, 2011), due to their over-disclosure concerns; teachers may not feel confident in protecting themselves against contact from parents and pupils. Cyclically, these concerns may then influence teachers' negative perceptions (Hew & Brush, 2006).

Teachers who perceive the risks of SNS use more readily may deliver more negatively skewed lessons, thereby highlighting the risks more so than the benefits (Kalmus, von Feilitzen & Siibak, 2012). This may result in children perceiving the risks more greatly and lacking awareness of the benefits of SNS use (Livingstone, 2017). Teachers with negative perceptions may avoid discussing SNS use, resulting in children having limited understanding altogether (Manca & Ranieri, 2016). On the other hand, teachers who perceive SNS use more positively may deliver more balanced lessons, considering both the risks and the benefits. Albeit, this may encourage SNS use amongst an age range that technically should not be using these sites.

The literature is lacking an understanding of the role of teachers in shaping children's perceptions of SNS use. An understanding of how primary school teachers perceive the risks and benefits of SNS use, and how this shapes their e-safety education, remain largely unexplored. It is important to consider the influence of teachers upon children's perceptions of SNS use as they play a crucial role in children's lives.

2.4 Research focus

The iGen are using SNS in order to engage within a digital society. Empowering children within the digital age involves educating children about both the risks and



benefits, including those children under 13 years who are not presumed to have access to SNS. Parents' and teachers' internet mediation behaviours are important in shaping children's perceptions, as well as their exposure to these risks and benefits. Adults' internet mediation behaviours are informed by their own risk and benefit perception. Importantly, research considering the role of parents and teachers within the development of the iGen's SNS risk and benefit perception is limited. Research is showing that children under 13 years are accessing these sites and that both their parents' and teachers' advice is an important source of information. Yet, we do not know how perceptions and internet mediation behaviours may shape the iGen's perceptions of the risks and benefits of SNS use.

This study aims to explore parents', teachers' and children's (8- to 12-year-olds) perceptions of the risks and benefits of SNS use, as well as adults' internet mediation behaviours. This will be conducted via thematic analysis of one-to-one semi-structured interviews. A qualitative approach will be taken in order to gather nuanced information embedded within the context of the Digital Age. With children, perceptions of the risks and benefits will be discussed via breaking down notions within the literature, including over-disclosure, social capital, self-presentation, and cyberbullying, as well as discussing more generally. With parents and teachers, we will explore their own perceptions of the risks and benefits of SNS use, as well as their internet mediation behaviours. Developing an understanding of parents', teachers' and children's perceptions of the risks and benefits of SNS use, and how adults' perceptions shape children's SNS behaviours, will support parents, teachers and policymakers in the design of education, interventions and policies advising children's SNS use.

3. Method

3.1 Participants

Schools were recruited in association with another project led by this research team. The lead researcher is an ex-primary school teacher and previously taught at three of the schools; therefore, they were known by some parents, staff and pupils. Participants were recruited through seven primary schools across England: four schools from the North and three from the South (Table 1). These participants consisted of 13 parents (aged 28-48; 84.6% female; $M_{\text{age}} = 38.69$ years), 14 teachers (aged 26-54; 64.3% female; $M_{\text{age}} = 35.69$ years) and 15 children (aged 7-12; 40% female; $M_{\text{age}} = 9.60$ years). One child's data was omitted from analyses due to a technical error with the



recording. Participants were recruited via opt-in consent. Parents and children were recruited as pairs so that they came from the same family, except for one child whose parent was not interviewed. Two children were interviewed with the same parent. All teachers, except one, directly taught a child interviewed. This was to ensure that perceptions could be related to both teacher and parent mediation. One child was registered with special educational needs (SEN). Two children were registered as having English as an Additional Language (EAL).

In order to explore socioeconomic status, each school's Pupil Premium was used as a proxy measure. Pupil Premium is a government grant provided to schools based on the number of children receiving free school meals, or living with a family household income below £16,190, within that school population (Education & Skills Funding Agency, 2020). In Sheffield, 28.5% of children were pupil premium; in Stoke-On-Trent, 26% children; in Surrey, 19% children; in Norwich, 10% children; in Essex, 7% children.

Table 1. Participant demographic information for ethnicity and school county.

	n							
	Ethnicity			School county				
	White	Asian	Mixed	Essex	Sheffield	Stoke-On-Trent	Surrey	Norwich
Parents	11	2	0	3	4	4	1	1
Teacher	14	0	0	3	2	6	1	2
Childre	11	3	1	3	5	4	2	1

3.2 Measures

3.2.1 Interview questions

The interview questions were designed in accordance with whether the participant was a child, parent or teacher. These questions had a semi-structured design comprising of a flow chart (Appendices I, J & K). This design was implemented based upon discussions of academic rigour within the qualitative research community, such as



encouraging participant-led data and flow of questions (De Wet & Erasmus, 2005; Levitt et al., 2017). A flow chart was implemented in response to Deatrck and Faux's (1991) recommendations on interview guides, especially with child participants (as cited in Morse, 1991).

All interviews began with asking about SNS use (Table 2). Initial questions included specifying whether the participant owned or had access to any SNS accounts, as well as what their general online activity entailed. Participants who identified as not owning or using SNS were asked whether any friends or family used these sites, and had them explain, to their knowledge, what SNS were used for. This was asked to ensure that all participants possessed an accurate interpretation of what SNS are, as well as distinguishing how active participants' online activity was. Parents and teachers were asked about their own SNS use, as well as their perceptions of their children's use in order to explore potential explanations for their internet mediation behaviours. Parents and teachers were also asked about their internet mediation behaviours and where they may source information to form these.

Table 2. SNS profile ownership amongst children, parents and teachers; not including co-use.

	Profile ownership						
	n (%)						
	Facebook	Instagram	SnapChat	YouTube	Whatsapp	Other*	None
Children	1 (7%)	2 (13%)	6 (40%)	4 (27%)	4 (27%)	5 (33%)	3 (21%)
Parents	10 (77%)	5 (38%)	6 (46%)	4 (27%)	6 (46%)	0	3 (21%)
Teachers	12 (86%)	9 (64%)	2 (14%)	2 (14%)	6 (43%)	1 (7%)	3 (21%)

*examples include: Roblox, Music.ly; Funimate; Minecraft; Fortnite.

3.2.2 Vignettes

Research suggests that vignettes are particularly effective when collecting qualitative data from younger children, hence the adoption of this methodology (Barter & Renold, 1999; Barter & Renold, 2000). Vignettes were designed to reflect notions within the literature. These notions included over-disclosure, social capital, self-presentation and cyberbullying. A vignette about co-use was also added in order to open a dialogue about parents' internet mediation behaviours. These were broken down into sub-notions to



ensure that nuances within these notions would not skew the data. For example, over-disclosure was broken down to the sub-notions of public and private (Table 3). Children were asked to provide advice for an imaginary child and outline whether they would model this behaviour, providing explanations for their reasoning (“Would you do the same? Why/why not?”; Table 3). Names of imaginary children were consistent across all interviews.

Table 3. Vignettes and their related theoretical notions and sub-notions used in the child interviews.

Theoretical notions	Sub-notions	Vignette
Over-disclosure	Public	Claire has a Facebook account. On her public profile she has her date of birth, school and the name of the town she lives in
	Private	Sam sends Sarah direct messages on Instagram telling her about his secrets
Social capital	Bridging	David made a new friend on Facebook
	Bonding	Adam uses Instagram to keep in touch with his old friends from primary school
Self-presentation		Azeem worries about posting photos on Instagram in case he doesn't get any likes
Cyberbullying	Victimization	Rachael read a status on Facebook that was about her and it made her feel upset
	Perpetration	Craig posted a photo of Rebecca on his SnapChat story to make his friends laugh
Co-use		Sameer shares his SnapChat account with his mum

3.3 Procedure

Prior to data collection, this study was submitted for a full ethical review and approved under the ethical procedure of the Royal Holloway Ethics Committee. This study also complied with the ethical guidelines of the British Psychological Society. The lead



researcher had a full Disclosure and Barring Service (DBS) check and completed all of the interviews with children, parents and teachers.

Most interviews took place during the course of a school day within the school premises. Interviews were designed to take approximately 20 minutes in length to avoid difficulties fitting into the school day (particularly for teachers). Five interviews (one parent and one child from one household; one parent and two children from a different household) were conducted during the evening within separate rooms in the participants' homes. Interviews averaged at 19 minutes in length for parents and teachers, and 16 minutes in length for children. Each interview was recorded using a digital recording device that was placed on a table between the participant and the lead researcher. Participant consent for the interviews to be recorded was obtained verbally prior to turning on the device. All recordings were immediately transferred for transcription. All participants were assigned a unique numerical code alongside their category (e.g., Child 1). The corresponding participant's unique ID code and their demographic information were stored within a password-protected file to later be added to the transcription. All participants received a written and verbal brief and consent form prior to commencing the interview, and a verbal and written debrief following completion.

3.4 Data analysis

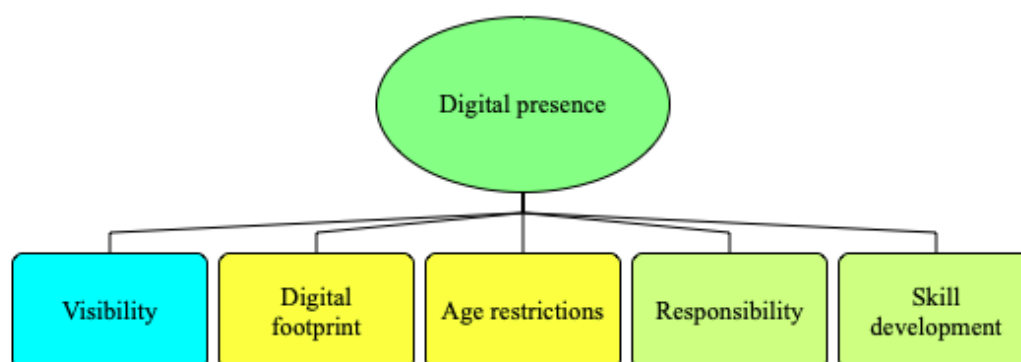
All recordings were transcribed verbatim by the lead researcher (to ensure accuracy and depth of familiarisation with the data) into Microsoft Word documents, which were subsequently imported into NVivo software for analysis. Inductive thematic analysis was used, in accordance with Braun and Clarke's (2006; 2013) framework, in order to elicit and interpret semantic patterns within the relevant context. Initial codes were identified within transcripts and documented using the NVivo software. These codes were constructed independently within the context of each individual transcription to ensure that themes and sub-themes were not formulated prematurely (Braun & Clarke, 2013). Once initial codes had been constructed for each transcription, they were semantically compared. Firstly, initial codes were compared contextually to identify potential emerging sub-themes. Secondly, these codes were compared across participant groups to establish whether participant groups (children, teachers, parents) shared similar or differing perceptions of their SNS experience, allow for further sub-theme development. Finally, these codes were compared across all participant groups



to identify larger themes (Braun & Clarke, 2013). These themes were combined to form broader themes and sub-themes via thematic maps. These themes were then further analysed and refined both via the repetition of the above process to ensure consistency and homogeneity (Braun & Clarke, 2013) and through discussion with co-authors.

4. Results

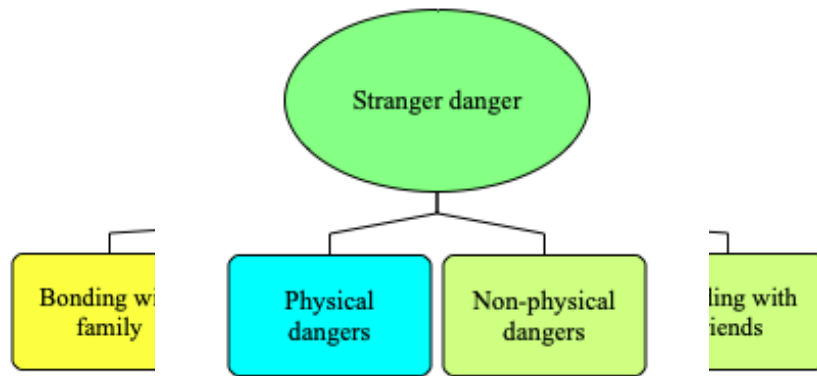
Four main themes were identified from the data, these included 'social capital', 'digital presence', 'stranger danger', and 'e-safety'. From all participant groups, 'social



capital', 'digital presence' and 'stranger danger' emerged as main themes. Predominantly amongst adult participants, 'e-safety' emerged as a main theme. Within a smaller group of participants, 'cyberbullying' also arose as a theme. All of these themes also contained a number of sub-themes. An overview is provided in Figures 1 to 5.

Figure 1. An overview of the thematic main theme: digital presence (circle) and sub-themes (squares) identified within the dataset; blue (dark grey) indicates codes were most prominent amongst child participants; yellow (grey) indicates codes were most prominent amongst adult participants; light green (light grey) indicates codes were prominent amongst all participants.





Figure

2. An overview of the thematic main theme: social capital (circle) and sub-themes (squares) identified within the dataset; yellow (grey) indicates codes were most prominent amongst adult participants; light green (light grey) indicates codes were prominent amongst all participants.

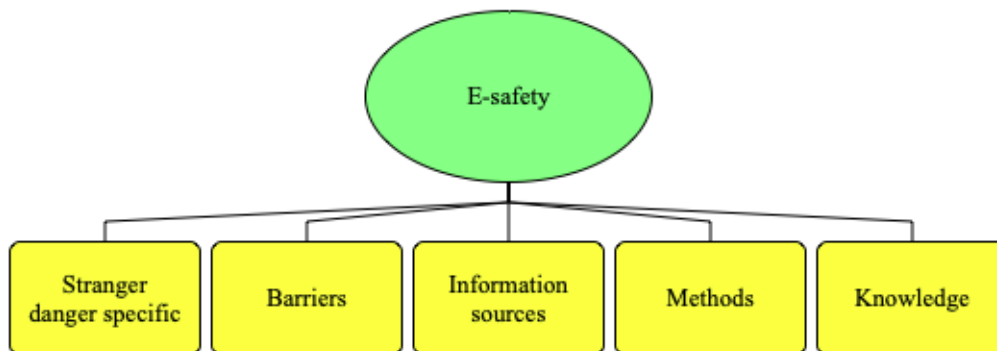
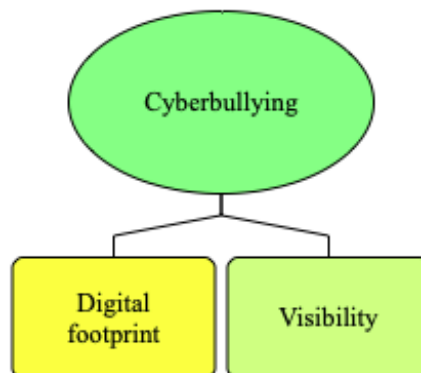


Figure 3. An overview of the thematic main theme: e-safety (circle) and sub-themes (squares) identified within the dataset; yellow (grey) indicates codes were most prominent amongst adult participants.



Figure 4. An overview of the thematic main theme: stranger danger (circle) and sub-themes (squares) identified within the dataset; blue (dark grey) indicates codes were most prominent amongst child participants.

Figure 5. An overview of the thematic main theme: cyberbullying (circle) and sub-themes (squares) identified within the dataset; yellow (grey) indicates codes were most prominent amongst ac



4.1 Digital presence

4.1.1. Children

Children perceived digital presence (defined as the sensation of “‘being there’ in a synthetic environment” ; p.72, McMahan, 2003) as beneficial in terms of developing creative skills, such as arts and crafts: “I did get the idea of making Harry Potter wands from YouTube” (Child 12). Digital presence was strongly associated with the responsibility of being online. Children suggested that behaving irresponsibly online, particularly in terms of over-disclosure, presented risks: “if you’re my age, some friends can’t really hold secrets” (Child 1). Children believed responsibility limited exposure to the risks of SNS use.

Children perceived the visibility of digital presence as risky: “if you don’t have a private account then anyone can contact you” (Child 9); they also associated public visibility with over-disclosure and exposure to stranger danger: “people might pretend to be your friends because they know everything about you” (Child 13). Privacy settings were identified as beneficial for reducing visibility and thus protecting against these risks: “I think the privacy settings are good because...if you don’t want people to see things that you post then you can make it private” (Child 9). Children did not view private visibility (i.e., disclosing to contacts) of general information as risky: “Like your date of birth and that...should be in like a private profile” (Child 6).

4.1.2. Parents

Parents perceived digital presence as beneficial for their children’s skill development: “I think she’s going to be something of an emerging film-maker” (Parent 7). Parents who expressed this perception often presented co-use internet mediation behaviours: “my son put up loads of pictures and some text with it, so we’ve...we decided to keep and use that one because it was a nice way for him, almost a nice introduction to sort of...photo journalism” (Parent 1). Parents who depicted more restrictive internet mediation behaviours also perceived the benefits of skill development but were less knowledgeable of technology: “I’ll be like, “oh I don’t know how to do that!” and she’ll be like, “oh pass it here, mummy!” (Parent 11). Regardless of internet mediation behaviours, parents perceived adolescent digital presence as more risky, “I don’t know how it’s going to get as they get older...I imagine it’s going to get tougher” (Parent 4). This was particularly in consideration of digital footprint concerns: “I’m frightened that



young people will get to the age when they...they're being offered opportunities and they're unable to take it because of...because of their history" (Parent 1).

Parents who described restrictive internet mediation behaviours perceived younger children as not being "responsible enough" (Parent 9) to have a digital presence. These parents often referred to their children as "not old enough" (Parent 2) to use SNS, although parents were uncertain of official age restrictions: "like Facebook is like not until you're a...is it 13?" (Parent 13); "is it 14 you have to be legally for Facebook? There is an age isn't there?" (Parent 9). Parents who depicted enabling internet mediation behaviours expressed concern for the potential stigma that could be attached to them as parents for allowing their younger children online: "obviously there's the age restriction, I purposefully and intentionally registered my son...even knowing that Instagram was actually not for 12 year olds" (Parent 10).

4.1.3. Teachers

Many teachers viewed digital presence as beneficial for pupils' skill development: "As long as it's used properly, it's a brilliant platform. There are some people that like have got jobs and are now millionaires based upon pushing things through social media" (Teacher 4). The opportunities for teachers to encourage this development, however, appeared to depend on school attitudes "I feel like there's a lot of support here, but possibly in other schools there's possibly not as much as what we do" (Teacher 7).

In general, teachers perceived younger children having a digital presence as risky: "I find that question quite hard if I'm honest...it's always been my experience...with children...at the moment it's always been like, I suppose, not a positive experience" (Teacher 3). Teachers expressed the requirement for them to discourage pupils from using SNS: "I don't think it's really my place to be promoting it when technically they're too young to use them" (Teacher 8). Some teachers expressed more open school attitudes towards pupils' digital presence, suggesting that although they did not endorse digital presence, they did not actively discourage it either: "so even though they're not allowed on it, we are, we're very open as a school and we know that they're on them" (Teacher 2).

The risk of creating a digital footprint was particularly vocalised by teachers: "the big risks that they have got nowadays is that digital footprint that they're going to create and that's going to be with them forever" (Teacher 11). Teachers perceived that children did not fully comprehend this risk, although they tried to educate their pupils



accordingly: "I...m-make them realise that when they take a photo it's got a digital fingerprint that they haven't necessarily thought of" (Teacher 10).

4.2 Social capital

4.2.1 Children

Many of the children stressed that they would accept friend requests "only if I knew them in real life" (Child 7). Children perceived SNS as particularly beneficial for bonding with friends who had moved away: "if you have a friend who is far away from you, you can talk to him" (Child 9). Children also perceived social autonomy as a beneficial aspect of SNS use: "you get to chat to your friends whenever you want" (Child 14), as well as the ease of using SNS: "Well Whatsapp is easy...you can just type it away" (Child 9).

4.2.2 Parents

Parents perceived bonding with family and friends, and bridging, as beneficial aspects of SNS use: "my friends and family are in [name of country] so it's much easier to erm contact them and...stay in touch that way" (Parent 2). Parents expressed that sharing information and organising plans via SNS was easier than doing so offline: "our busy lives nowadays, we don't have time to pick up the phone and talk to them on the phone and so I just think Whatsapp and SnapChat just keeps us in the loop really" (Parent 4).

A minority of parents also viewed social capital online as beneficial for their children. These benefits were primarily bonding with friends: "their friends will be on there with their own accounts and they'll be able to talk to their friends and things" (Parent 5); bonding with family: "she's his godmother and they send lots of like silly SnapChats and things to each other and things like that and he likes that" (Parent 12); ease of communication "just like makes him feel close to us...he knows that he can speak to me or his dad anytime" (Parent 4). These parents, who identified the social capital benefits, often depicted co-use internet mediation behaviours: "we use YouTube in the evening, it's part of our bedtime routine, we watch videos in bed like Time Channel or Michael Rosen, that's like our chill out time together" (Parent 5).

4.2.3 Teachers

Teachers perceived bonding with friends and bridging as beneficial aspects of SNS use: "Facebook I've been doing a lot of fundraising... erm like I said it's been brilliant for fundraising and awareness and things like that" (Teacher 8). Teachers identified bridging in terms of connecting with distant friends, as opposed to forming new relationships: "it's just a nice easy way to keep in touch with somebody without having



to speak to someone regularly you can still feel like you know what they're doing and stay in contact with that person" (Teacher 5). As with children and parents, SNS was perceived as "an easier way of getting things out there" (Teacher 12), thus highlighting ease of communication as beneficial.

Teachers perceived the ability to "chat to friends outside of school" (Teacher 3) as a beneficial opportunity for their pupils to bond with friends. For example, engaging with wider communities and learning to collaborate/network: "breaking down barriers, y'know sharing experiences" (Teacher 14); "so they've kind of communicated to them as, as like, so like "ooh don't forget your pocket money for the trip," so they can communicate things about school really in a positive way" (Teacher 3). These perceptions linked with an educational approach, particularly relating to digital literacy: "schools use Twitter to share learning and some schools put writing and things on there" (Teacher 6).

4.3 Stranger danger

4.3.1 Children

All of the children perceived stranger danger as a risky aspect of SNS use: "I wouldn't add them because they could be a stranger" (Child 12). Both disclosing information directly to a stranger and over-disclosing information in general were perceived as predictors of being contacted by a stranger: "they could be an adult and they could try to get information about you" (Child 7).

Children perceived physical dangers of kidnap and violence as potential outcomes of stranger danger, linking these with over-disclosure online: "if you've got information like where your school is erm strangers could come and kidnap you from your school" (Child 7). Most prominently, children perceived the risk of being located by strangers, often referring to stalking, but did not proceed to explain what the consequences of this could be: "people can look and like find out where you live and they could come round" (Child 8); "they can like look you up on other social medias and find where you are" (Child 9).

Hacking was vocalised by many children: "someone could have hacked their account, taken all their stuff and be posting saying that they're them" (Child 9), followed by trolling: "if it was anonymous then I'd be more upset because you don't know who it is, it could be anybody" (Child 5).



4.3.2 Parents

Parents perceived stranger danger as a prominent risk: “talking to sort of adults on the other side and I think that’s the...those things really do scare me” (Parent 4). Over-disclosure was associated with contact from strangers: “I am conscious of school uniform...or erm...if...if it’s something, anything traceable basically that can link them back to the school, because someone could be waiting, you know, looking for them or anything like that” (Parent 9). Parents perceived their children to be at risk of being catfished (stranger concealing their true identity by pretending to be someone else; Harris, 2013): “you could be talking to someone that says that they’re this person but they’re not actually this person, they’re completely someone else” (Parent 13). Parents also perceived grooming as risky, particularly due to the invasion of privacy in their home: “it was a man, there were questions that he was asking that really concerned me...nothing...nothing really bad but, I, again...from doing stuff to do with social media and all that kind of grooming side of things” (Parent 5).

4.3.3 Teachers

Teachers perceived the risks of catfishing as particularly risky: “people can actually pretend to be who they are, so people can put on a full-on false account and you’d fully believe that” (Teacher 9). Regarding the specific risks of stranger danger, teachers perceived over-disclosure as problematic: “you wouldn’t walk into a football stadium and put your phone number across the scrolling display for everyone to see, so why would you do something like that on the internet? But they don’t see it in those terms” (Teacher 13). Teachers also identified the risks of grooming: “they’re all really, really savvy and they could, again, just draw all these youngsters in” (Teacher 12).

4.4 E-safety

4.4.1 Children

Children perceived selectiveness of contacts as an effective e-safety strategy: “I’ve not friended anyone that I don’t know, erm...even on Facebook...all the people that I’m friends with are people I already know...erm...on a personal level, I just don’t think it’s right to friend someone that I don’t know” (Child 3). Limiting disclosure was perceived as important: “you shouldn’t like tell anyone your address...or email or...your age...and like things about that’s private” (Child 15). Utilising settings to limit public disclosure were also identified as beneficial: “if you’re a private account then people that want to see your page you have to request” (Child 9). Children



vocalised e-safety strategies in terms of moderating friendship difficulties, this was contextualised within the perceived risk of cyberbullying.

4.4.2 Parents

Parental internet mediation behaviours were perceived as a socially expected e-safety strategy: “you just think, ‘where were the parents then?’ like...like these teens going to meet other people and you think, ‘wh-where were the parents?’” (Parent 4). The internet mediation behaviours discussed by parents were primarily restrictive. Parents perceived settings as a beneficial tool for minimising children's exposure to risks (mainly stranger danger): “I think that's the main thing, checking privacy and settings” (Parent 6). Parents also vocalised actively monitoring their children's SNS use via directly checking: “I'll do it behind your back or by means of technology we have installed in the house” (Parent 13), and disallowing private use: “we've got our computer down in the living room” (Parent 8).

Few parents vocalised enabling internet mediation behaviours. Those who did discuss these expressed laissez-faire internet mediation styles: “I don't have a lot of restrictions on their internet use so...practically, they could go onto just about everything and anything as it goes...don't necessarily have a problem with that” (Parent 5), these parents presented confident SNS knowledge and regular discussions with children: “they'll come to me with a message from somebody and...consider...what to do next” (Parent 12). Empowering children to use SNS independently was perceived as important by some parents but was viewed with uncertainty due to safety risks: “you want them to use the technology... but you want to make sure they know how to use it safely” (Parent 6).

A limited understanding of SNS use appeared to be a concern for many parents: “I started out on the internet in 1993 which is quite a long time ago and it was a lot different then and it's kind of outgrown me” (Parent 1); “I think that's down to the fact that I'm not really 100% on how to do it” (Parent 5). As a result, parents appeared to rely on information from schools: “I think it's brilliant support in school. You know I mean like I said they know actually how to report a website, they really know what they're looking for more than I could ever tell them” (Parent 6). Parents identified e-safety education in schools as an important internet mediation tool, vocalising the appreciation of specific education regarding SNS use: “they do come home from school and they do talk about, y'know, IT and the dangers and they talk about social media” (Parent 4). External providers were also identified as useful sources: “people come in



and they run the courses" (Parent 9); these providers were always discussed as being sourced by schools.

4.4.3 Teachers

Teachers with restrictive methods were vocal to both children and parents regarding age limitations and therefore refrained from SNS education: "with using the internet there's things that you shouldn't be doing, things that they should NOT be doing and that's something that we really have to get across" (Teacher 14). These teachers often identified as having safeguarding concerns of children trying to connect with them via SNS: "as soon as Facebook became a really big thing, it w-was my full name, to start off with, and then I slowly started to tweak and make amendments so that...it was still me, but harder for people to track" (Teacher 10). Restrictive teaching methods were often utilised by those with limited understanding of SNS: "I know it's around but I just don't know enough about it" (Teacher 10).

Alternatively, many teachers perceived empowering children's SNS use as important due to the popularity of SNS despite the age restrictions: "cos at the end of the day, if they're gonna use it, they're gonna use it, it doesn't matter...what we saying [...] so it's just about being safe if they do use it" (Teacher 4); "we kind of just say, "we know you're on social media, but it's about using it the correct way"" (Teacher 7).

E-safety education varied hugely within schools ranging from e-safety specific days/weeks: "well we have an e-safety week, every year" (Teacher 8) to regular e-safety lessons "we always have a lesson at the start of every term with what we call an 'e-safety lesson'" (Teacher 5) and e-safety messages incorporated within the environment: "we have displays up in school" (Teacher 2). The regularity and format of these lessons varied widely across schools consisting of planned materials by teachers: "everything is ready for e-safety week and we're given tailored plans of how to deliver the sessions" (Teacher 7) to resources incorporated from elsewhere: "there's like a ohh what is it like CEO, there's a website- Researcher: Ceops? Participant: Yeah and they do different videos and things that we've watched" (Teacher 6) and general conversations: "we kind of talked about different scenarios of what they'd have...like how would...how would you deal with this? Kind of scenarios" (Teacher 4).

Barriers to delivering e-safety education were vocalised including a lack of resources: "we're not exposed to computers in our classroom, you see, erm...so it's not something that I've really had to look into here, we don't even use iPads so...[laughs]" (Teacher 9) and lack of time: "as classroom teachers, if you've got to go out there



searching for information...in busy...busy lives... you may not do that" (Teacher 11). Specific to SNS use, barriers consisted of its negative reputation: "we don't use the internet because there's so much dangers" (Teacher 4) and the higher prioritisation of core subjects: "if you've got targets in English and Maths to hit, that's going to take priority over learning about social networking sites" (Teacher 11). The perception that younger pupils are not particularly active on SNS also presented a barrier: "I find it's quite a difficult one for younger ones...I feel like younger ones really sort of...aren't really at that stage yet" (Teacher 5).

4.5 Cyberbullying

4.5.1 Children

A few children perceived cyberbullying as a risk of SNS use: "like Instagram and Facebook [...] it's quite hard not to get bullied, you're probably going to get bullied" (Child 1). Children perceived the disinhibition of SNS use as a risk of perpetration: "you might go further and post worse stuff" (Child 7). Albeit, the majority of children's experiences appeared to relate to isolated aggressive incidences rather than bullying:

Child 4: there was once this little fight that happened through Whatsapp like...I think it all started from something stupid like I posted a dumb gif, you know what those... Researcher: Mm.

Child 4: Yeah so I posted one of those like, 'that's stupid,' and then it was kind of like a fight.

4.5.2 Parents

Parents perceived cyberbullying as a risk, particularly due its public visibility: "he's been really trying to discredit her publicly" (Parent 12). Parents also perceived the inability to escape from bullying as a risk of SNS use: "I think as a parent, you want to keep your children safe and if they are in your house you want them to be safe whereas...now...they're not safe because you've got online everything" (Parent 9). School judgement was perceived as a risk of dealing with cyberbullying incidences due to the age limitations of SNS: "I'd probably end up feeling like they would then go... "Oh, well, you shouldn't really allow your child to be on there," and then they'd be all like judgey" (Parent 5).

4.5.3 Teachers

Similarly to parents, teachers perceived the public visibility of cyberbullying as risky: "my class was having an argument on Whatsapp...erm...and they were bringing family members in on it and they were adding the stepsister in on it who doesn't even go to



the school” (Teacher 1). Teachers also perceived the inability to escape cyberbullying as a risk: “every time they took themselves off of the group they kept getting added back on by the child, so this other child then setting up another group and then there were names being called” (Teacher 3).

5. Discussion

This study aimed to explore parents', teachers' and children's perceptions of the risks and benefits of SNS use, as well as adults' internet mediation behaviours. Adults appear to identify the importance of engaging with the internet in a digital age, yet they are particularly concerned about the risks of stranger danger. Stranger danger concerns inform restrictive internet mediation styles both within the home and school environments. A focus upon the risks of stranger danger was consistent across adults and children, with most parents reporting using restrictive internet mediation styles. Our findings highlight similarities between adults' and children's perceptions of the benefits of SNS use, specifically in terms of bonding social capital. Differing perceptions were discussed in terms of technical risks, such as hacking and trolling, with children perceiving these as risks but adults not discussing them.

5.1 Digital Presence

Adults acknowledged the importance of the digital age as “the world we live in now” (Teacher 7) and recognised that their children would eventually have a digital presence. Responsibility was perceived by both adults and children as a core aspect of having a digital presence. Yet, what constituted responsibility varied (Ungar, 2009). Restrictive parents, as well as many teachers, perceived the age restrictions upon SNS use as an indicator of responsibility. Enabling parents tended to disregard the age restrictions, instead perceiving responsibility based upon their child's decision-making (Özgür & Ucar, 2016). Those who believed their children would make ill-judged choices online tended to co-use more, whereas those who believed their children would discuss their use were more *laissez-faire*. Similar findings are reflected within research considering parent-child communication and parenting styles (Fitzpatrick, Marshall, Leutwiler & Krcmar, 1996; Noller & Bagi, 1985).

5.2 Benefits of SNS use

The benefits of bonding social capital were very clearly identified by children. Limited in opportunities to socialise, SNS provides children with a platform to communicate



with greater freedom (Quinn & Oldmeadow, 2013; Valkenburg & Peter, 2009). Specifically, children are empowered in the continuation of bonding long-distance friendships (South & Haynie, 2004); particularly vocalised among the children within this study. The importance of maintaining these friendships during childhood is embedded within the developmental benefits of social capital and wellbeing (Ferguson, 2006; Morrow, 1999). Importantly, our findings suggest that social capital is important for children, and that SNS is an empowering tool for achieving social capital goals.

Adults recognised the benefit of a digital presence in terms of bonding social capital. Communication with family who live far away, providing updates and checking in with immediate family members were the most regular forms of social capital maintenance discussed (Pinkerton & Dolan, 2007; Steinfield, Ellison & Lampe, 2008). SNS is often used as a medium for discussing and organising plans, as well as updating friends who live further away (Cornejo, Tentori & Favela, 2013; Madge, Meek, Wellens & Hooley, 2009).

The benefits of bonding social capital for children were recognised by adults presenting enabling internet mediation behaviours. Enabling parents described co-use of SNS with their children, whilst enabling teachers described more interpretive behaviours, both expressing their desire to assist children in becoming digitally independent (Holloway, Green & Livingstone, 2013). Children who co-used SNS with their parents emphasized the benefits of social capital. This supports findings of parental internet mediation behaviours relating to children's exposure to the benefits of SNS use (Livingstone, Nandi, Banaji & Stoilova, 2017). Although children often referred to information they had learnt at school this was unrelated to the benefits of social capital. It could be surmised therefore that the educational message children receive is predominantly negative (boyd & Hargittai, 2013; Hew & Brush, 2006).

5.3 Risks of SNS use

Over-disclosing to strangers and subsequently receiving inappropriate contact was expressed as the greatest risk of SNS use. This strong emphasis upon stranger danger is unsurprising within the digital age. Prior to the creation of SNS, adults were increasingly conscious of stranger danger, which fostered a climate of 'paranoid parenting' (Furedi, 2001; Kidscape, 1993; Stokes, 2009). Early internet research identified children lacking understanding in terms of safeguarding themselves, resulting in the requirement for education about stranger danger, arguably enhancing



paranoid teaching (Kraizer, Fryer & Miller, 1988; Moran, Warden, Macleod, Mayes & Gillies, 1997). Now, children are able to access online platforms more easily and can communicate without adults' knowledge (Sharples, Graber, Harrison & Logan, 2008). This removes adults' protective power, enhancing paranoia (Byron, 2007). Fear of stranger danger encourages restrictive internet mediation behaviours both by parents and teachers, even for those who are typically more enabling (Foster, 2014). These fears were particularly vocalised by adults with limited understanding of SNS.

Adults raised concerns about children bridging online (boyd & Hargittai, 2013). Bridging online was viewed as a precursor to forming relationships with strangers. Using an online platform to impersonate a fake identity with the intention to deceive is known as 'catfishing' (Harris, 2013). Adults were particularly concerned about strangers catfishing children with the intention to groom. Mediation behaviours reflect this perception in terms of restricting certain online contact. Yet, the children within this study did not view bridging as a required behaviour of SNS use. In fact, children were particularly vocal about the risks of bridging online and were clear to outline their desire to bond social capital only; this suggests that adults' perceptions of the risk for children's bridging online behaviours may be less relevant today.

Children identified that the ultimate risk was the fact that strangers could physically locate them (Livingstone, Kirwil, Ponte & Staksrud, 2014). Yet, they rarely expanded on what would occur following this. Teachers vocalised that stranger danger education in primary school settings often fails to outline the realities due to avoiding frightening children; this has also been recognised within literature (Sharples, Graber, Harrison & Logan, 2009). Perhaps this shapes children's limited view of the consequences. Interestingly, hacking and trolling were identified as particular risks by children, with secure privacy settings being viewed as mitigating these (Donovan & Katz, 2009). Children therefore mirrored the restrictive internet mediation behaviours of adults (e.g., focusing on strict settings) when it came to safeguarding themselves from strangers.

A small minority of children also acknowledged the risks of over-disclosure leading to cyberbullying (Schacter, Greenberg & Juvonen, 2016). Friendship difficulties translating from offline to online, disinhibition and misinterpreted interactions were perceived as a precursor to cyberbullying. Such predictors of cyberbullying have also been identified within the wider literature (Dehue, Bolman & Völlink, 2008). When asked about minimising these risks, however, children were



fairly vague in terms of strategies. Children either informed their parents or teachers, or resolved the issue themselves. Such strategies are commonly used to in response to traditional bullying (Demaray et al., 2013; Rigby, 2005; Sampasa-Kanyinga, Lalande, Colman, 2020). Children therefore appear to replicate traditional bullying coping strategies to experiences of cyberbullying and online friendship challenges (Evans, Cotter & Smokowski, 2017; Fahy et al., 2016).

Coping strategies for traditional bullying may be ineffective (Price & Dalgleish, 2010; Smith et al., 2008). As identified by the adults within this study, a particular risk with cyberbullying is the permanency and publicness of the act. For example, attempting to resolve a situation could lead to the perpetrator screenshotting and publicly misconstruing the conversation (Livingstone, 2009). Children's lack of awareness regarding cyberbullying and coping strategies may be due to the stronger focus adults place upon stranger danger. Children do not appear knowledgeable of the outcomes of over-disclosure within a private account (e.g., cyberbullying) which may expose them to these risks.

This focus upon stranger danger is problematic. Although it is important for children to be aware of the risks of over-disclosing to strangers, there are many more relevant risks of SNS use. Enhancing privacy settings is important for reducing visibility to strangers but does not limit the risk of over-disclosure (Schacter, Greenberg & Juvonen, 2016). Over-disclosure is still (if not more) possible even when visibility is private, due to disclosure between friends (Dennehy et al., 2020). Societal fears of stranger danger influence adults' restrictive internet mediation behaviours (Furedi, 2001). In reality, the likelihood of being contacted by a stranger is significantly less than other risks, such as cyberbullying (Livingstone et al., 2017). Adults' strong focus upon stranger danger is failing to target a broader range of more relevant risks.

5.4 E-safety

Internet mediation behaviours varied largely amongst teachers. Teachers presenting restrictive internet mediation behaviours manifested these within stressing the age limitations and stranger danger risks; they also expressed a low understanding of SNS use (Krumsvik, Jones, Øfstegaard, & Eikeland, 2016). Restrictive teachers were particularly concerned about their visibility online refraining from having a digital presence due to fears of breaching professionalism policies (Rodwell, 2017). Stranger



danger fears were also vocalised amongst these teachers. Combined, these concerns fostered restrictive behaviours.

Enabling teachers, on the other hand, were more vocal about the benefits of SNS use. Although aware of the risks these teachers were also keen to stress the opportunities. Unsurprisingly, these teachers expressed a greater confidence with SNS use and had a digital presence themselves. This greater confidence allowed for flexibility with e-safety education as these teachers felt they could apply it to a variety of other subjects thus lowering the barrier of prioritisation against core subjects. An association between greater confidence and flexibility in teaching has been widely identified within research (Gudmundsdottir & Hatlevik, 2017; Ng, Nicholas & Williams, 2010; Wilson & Stacey, 2004). It may also reduce the fear of contact from pupils and parents, as these teachers' possess necessary skills to safeguard themselves (Morris, 2010; Nikolopoulou & Gialamas, 2015). Despite this, these teachers appeared frustrated with the current climate of e-safety education within schools.

All teachers expressed that there were many barriers to delivering e-safety education. In these findings alone e-safety education varied from daily to one day a term. This highlights the lack of consistency across schools. Core subjects, such as Literacy and Numeracy, were regularly outlined as taking a precedent over subjects such as ICT, where e-safety would most likely be delivered (Shipton, 2011). For teachers who lack understanding, prioritising e-safety education is unlikely within an already overloaded curriculum (OECD, 2005). As previously identified within research (Gudmundsdottir & Hatlevik, 2017; Shipton, 2011), a lack of prioritisation was identified within school budgets for funding enough devices for pupils as well as inconsistencies within school policies. It was expressed by some teachers that any discussion of SNS was disallowed, whilst other teachers were allowed to be more vocal.

5.5 Limitations and implications

The participants within this study were from a wide range of geographic and socioeconomic backgrounds across England. A limitation, however, is the lacking representation of a broader ethnic background. Research suggests parental internet mediation behaviours, and parenting techniques in general, vary with ethnicity due to cultural differences (Greenberg & Mastro, 2008; Swindle, Ward, Whiteside-Mansell, Bokony & Pettit, 2014). Furthermore, socioeconomic status was not directly measured per participant. Again, research suggests that socioeconomic background can influence



parenting styles as well as children's access to the internet (Greenhow & Burton, 2011; Livingstone, Mascheroni, Dreier, Chaudron & Lagae, 2015; Micheli, 2016). Teacher attitudes towards lower income parents' internet mediation behaviours have also been addressed within the literature (Iruka, Winn, Kingsley & Orthodoxou, 2011; Halvorson, Lee & Andrade, 2009). Incorporating these measures would assist in further examining adult internet mediation within children's SNS use.

Importantly, this study highlights the similar and differing perceptions that parents, teachers and children have about the risks and benefits of SNS use, as well as how internet mediation behaviours can impact these. Implications which require consideration are that adults are placing too great a focus upon stranger danger and this is skewing children's perceptions of the security that online settings provide. Teachers currently feel mixed in their ability to educate children about SNS use due to vague and widely differing e-safety policies. Schools should prioritise e-safety education in terms of SNS use, despite age restrictions, and ensure that children are protected from the relevant risks (incorporate more on cyberbullying, not just focussing on stranger danger) but are also empowered in accessing the benefits.

5.6 Academic Rigour

In line with the APA JARS-Qual guidelines, this qualitative study maintained academic rigour throughout the research process. This was achieved via focusing upon two key components of the JARS-Qual guidelines: fidelity to the subject matter and integrity of conclusions. Fidelity was maintained within data collection techniques in terms of interviewing children, parents and teachers separately ensuring that the research question was theoretically answered from all perspectives, rather than focusing on adults alone. Further, the interview questions were framed in a way that ensured accessibility by all participants, particularly children, ensuring richness of data. Although the lead researcher (and interviewer) did maintain pre-existing relationships with some schools, only a small number of participants had previous direct contact with them. Of these participants, no differences were exhibited within the ethical or general process of the interviews. Within the data analysis process, Braun and Clarke's (2006, 2013) thematic analysis was implemented to ensure that final themes were concrete. These themes were also discussed in-depth with the entire research team to mitigate any pre-conceptions or misinterpretations of data. In terms of integrity, throughout the data collection, analyses and final interpretation of the data, context was strongly



considered. This is evident within considerations of the digital age, stranger danger and the current UK curriculum. All of these elements highlight the strong academic rigour that was maintained throughout this qualitative process.

5.7 Conclusions

This study is unique in its focus upon both adults and the iGen's perceptions of the risks and benefits of SNS use and the role of adult internet mediation behaviours. Importantly, this study focused upon the iGen's SNS use. Our findings highlight that younger children (aged 7-to-12) are using these sites and that they are doing so for the benefits of bonding social capital. Children are very aware of the risks of stranger danger and are utilising settings to mitigate these. Problematically, children do not appear to understand risks such as cyberbullying and may unintentionally expose themselves to these risks. Adult internet mediation behaviours, both internet parenting styles and teaching styles, mediate children's perceptions of the risks and benefits of SNS use, as well as their access to SNS. Both parents and teachers focus strongly on stranger danger risks and this is influencing children's online risk perception. Limited knowledge of SNS hinders all adults from educating children about their SNS use. For teachers, practical barriers of delivering e-safety education are a further hindrance.

Primary schools should prioritise SNS education with children from 8 years and avoid refraining from this due to beliefs that children are not accessing SNS. In doing so, schools should educate teachers to empower them in their e-safety delivery. Crucially, our study indicates the importance of significant adults acting as key mediators in children's use of SNS to help promote their development safely. Yet, this should be balanced, considering both the risks and benefits, rather than focusing specifically on particular risks.



Chapter 6

Children, social networking sites and mental health and wellbeing: A longitudinal study

1. Abstract

Immersed within a digital age, children aged 7-to-12 are engaging online. Despite the age restrictions of social networking sites (SNS) averaging 13 years, these are easy to bypass and children are using them (Livingstone & Helsper, 2008; Ofcom, 2019). Online behaviours have been widely linked to positive and negative outcomes for adolescence. This study aims to investigate children's behaviours on SNS and whether these predict self-esteem, mental health and wellbeing outcomes over time. With a sample of 258 children, aged 7-to-12 years, participants completed a longitudinal online survey over two time points (six months apart) measuring time spent online, online self-disclosure, self-presentation, bonding and bridging social capital, experiences of cyberbullying, self-esteem, wellbeing and mental health (anxiety and depression). Findings demonstrate that greater online self-disclosure, presentation of the real self and bonding social capital negatively predicted self-esteem, and bonding social capital positively predicted mental health (anxiety and depression). Whilst presentation of the false self to explore and bridging social capital positively predicted self-esteem, bridging social capital positively predicted wellbeing. Results are discussed in terms of the association between children's SNS behaviours and their social-emotional development.

Keywords

Children, social media, behaviours, mental health, wellbeing.



2. Introduction

Social networking sites (SNS) are increasingly popular within the digital age. Despite age restrictions (typically set at 13 years), younger children are engaging with SNS. In fact, children's SNS use is increasing amongst 8- to 11-year-olds (18% in 2018 to 21% in 2019; Ofcom, 2019). When we consider children's reality, this is unsurprising. Children born from 2010, coined the iGeneration (iGen; Rosen, 2010; Turner, 2015), have only known a world embedded within digitalisation and SNS use (Livingstone & Blum-Ross, 2017). Given digital expertise and widening access of children aged below the age restrictions of SNS (especially the iGen), it is important for us to understand the implications of children's, under 13 years, SNS use.

Positive mental health is the experience of a balanced range of emotions as well as the ability to empathise with others (Galderisi et al., 2017), while wellbeing is a dynamic, socially constructed satisfaction with life (Ferguson, 2006; Manwell et al., 2015). In 2018, the Good Childhood Report stated that 47% of children with low wellbeing experienced depression; this highlights that whilst mental health and wellbeing are separate constructs, they are closely connected. A rise in emotional disorders (predominantly anxiety and depression) have been reported amongst 5- to 19-year-olds between 2004 (1 in 10) and 2017 (1 in 8; Mental Health Foundation, 2018). This is particularly concerning when we consider that 75% of adults with mental health difficulties experienced onset before the end of adolescence (Kessler et al., 2005).

One argument proposed is that children are suffering with mental health and wellbeing difficulties as a result of the rise of SNS use (Kelly et al., 2018). In particular, time spent online may be associated with heightened risks and subsequently impair children's mental health and wellbeing (Hellström et al., 2012; Tonioni et al., 2012).

To date, research considering the iGen's SNS use is mostly descriptive (Domingues-Montanari, 2017; El Asam, Samara & Terry, 2019; Ofcom, 2019). Further, research has been limited with children under 13 years due to the belief that the iGen do not use SNS as they are under the age restriction; in reality, anyone can enter a false age and gain access (Livingstone & Brake, 2009; Livingstone, Ólafsson & Staksrud, 2011). Importantly, understanding of how the iGen behave online and to what extent this predicts mental health and wellbeing is limited.



2.1 Uses and gratifications theory

Online behaviours shape potential outcomes (Phua, Jin & Kim, 2017). Behaviours of the user are embedded within uses and gratifications theory: our needs influence the way in which we behave online, with gratification being the goal (Lariscy et al., 2011, Whiting & Williams, 2013). La Rose and Eastin (2004) argue that behaviours are not always successful. In fact, unsuccessful behaviour, which fails to achieve gratification, may be risky for mental health and wellbeing (Primack et al., 2017).

In accordance with uses and gratifications theory, the behaviour of the SNS user is what shapes the outcomes. However, there remains the assumption that the amount of time spent online, irrelevant of behaviours, is the catalyst to experiencing risky outcomes (Tonioni et al., 2012); this is especially for children (Kyung et al., 2013; Leung, 2014; Mesch, 2003; Nie, Hillygus & Erbring, 2002).

2.2 Time spent online

Time spent online may elevate risky outcomes, particularly reduced social capital: the development and maintenance of social ties (Kraut et al., 1998; Nie et al., 2002; Putnam, 1999), which can lead to impaired mental health (Kim et al., 2010; Kraut et al., 1998). Lee (2009) conceptualises this within displacement theory: activity substitution which detracts from elsewhere (Neuman, 1988). Essentially, spending time online detracts from face-to-face activities which are perceived as more positive (Turkle, 2011).

Concerns around time spent online is a general concern, but even higher when considering younger children's time online. Spending time online, rather than face-to-face with family or friends, may reduce relationship quality during a crucial stage of development (Sampasa-Konyinga & Lewis, 2015; Smahel, Brown & Blinka, 2009), and we know that low quality relationships predict mental health difficulties (Kraut et al., 1998; Sampasa-Konyinga & Lewis, 2015). However, time spent online may not predict risky outcomes as clearly as this. For instance, Kardefelt-Winther, Rees and Livingstone (2020) identified within a global sample of 9- to 17-year-olds that time spent online did not correlate with wellbeing scores. In fact, research is increasingly rejecting the displacement theory (Desjarlais & Willoughby, 2010; Hooghe & Oser, 2015; Valkenburg & Peter, 2007).

Rather than the amount of time spent online that it important, it is argued that individuals' online behaviours are what predict outcomes (LaRose, Eastin & Gregg,



2001; Morgan & Cotton, 2003). For example, Blais et al. (2007) identified that adolescents who used SNS to directly message their friends rated the quality of these online friendships more highly than those who just browsed their friends' profiles. The majority of research disregarding displacement theory uses adolescent samples. Importantly, an understanding of how specific behaviours online, as well as time spent, may predict outcomes remains unexplored.

2.3 Online behaviours

The controllability of online communication, and reduced nonverbal cues, eases the process of online disclosure (Schouten, Valkenburg & Peter, 2007). Offline, disclosure can be misjudged or misinterpreted leading to awkward exchanges and social difficulties (Rosen, 2001). Online communication mitigates these risks as the user has time and space to navigate interactions (Gritzalis et al., 2014; Mesch & Beker, 2010); this can be particularly beneficial for the management of social capital. On the other hand, due to lesser life experience than adults, children may be less successful at judging content appropriateness and nature of their audience (Christofides, Muise and Desmarais, 2011), which may result in self-disclosure: disclosing personal information to misjudged audiences (Kim & Dindia, 2011; Suler, 2004).

Online disclosure can impact social capital. Social capital comprises two components: bonding (maintaining strong ties) and bridging (forming new relationships; Putnam, 1993). In face to face interactions, the iGen are limited in social autonomy; wherever they socialise, they are monitored by adults (Corsaro, 2015). Online, managing social capital via SNS provides the iGen with a private space to socialise independently.

A private social space can be beneficial for bonding. Children can disclose personal information with friends, enhancing friendship quality (Rose, 2002), which subsequently benefits wellbeing (De Silva et al., 2005; Ward, Doherty & Moran, 2007; Yuan & Gay, 2006). Also, successful social capital management enhances self-esteem, which is a predictor of more positive mental health (Sowislo & Orth, 2013). Although, if a child misjudges the quality of a friendship and is higher in disinhibition, they may over-disclose; the recipient may respond negatively and the friendship could be impacted (Chak & Leung, 2004; Nowicki & Duke, 1992; Parker & Asher, 1987). Peer rejection predicts anxiety and depression in adolescence and adulthood (Panak & Garber, 1992). Throughout childhood, friendship quality is increasingly important, and



thus the ability to bond through SNS during childhood may be particularly beneficial for the iGen's mental health and wellbeing (Cillessen & Bellmore, 2004; Erwin, 2013; Glick & Rose, 2013; Rubin & Ross, 2012), but if their experience is negative the child could have a long-term detrimental outcome.

Bridging social capital has been shown to be beneficial for self-esteem. Steinfield, Ellison and Lampe (2008) identified that with young adults, particularly for those who already had low self-esteem, bridging online enhanced self-esteem; this is further supported by Johnston et al. (2013). It is important for us to understand how SNS use may be associated with self-esteem as it has been linked with more positive wellbeing and can mitigate onset of poor mental health (Mann et al., 2004).

Bridging online can expose children to strangers (Cernikova, Dedkova & Smahel, 2016). In fact, Lenhart et al. (2015) discovered that 36% of adolescents within their sample had online friends who were unknown offline. Disclosing to strangers can result in age-inappropriate contact (Bayraktar, Barbovsch & Kontrikova, 2016; Burén & Lunde, 2018; Morris, 2016), which can increase anxiety (Kowalski et al., 2014; Festl, Reer & Quandt, 2019) and depression (Dake et al., 2012; Radovic et al., 2017; Ybarra et al., 2005).

Behaviours to manage social capital online can influence both cyberbullying victimisation and perpetration. Unsuccessful bonding can lead to victimisation (Kowalski, Limber & Agatston, 2012; Nixon, 2014; Patchin & Hinduja, 2006; Smith et al., 2006). Particularly where an individual feels disinhibited online, they may over-disclose (Jiang, Bazarova & Hancock, 2013; Schouten, Valkenburg & Peter, 2007); the recipient may respond by cyberbullying. If an interaction is documented (e.g., via a screenshot) the cyberbullying may intensify due to having a larger audience (Slavtcheva-Petkova, Nash & Bulger, 2015). Further, online disinhibition may intensify an individual's inappropriate behaviour (i.e., cyber bullying). For example, children may misjudge online audience size and content permanency, resulting in feeling guilty when they realise the repercussions of their behaviour upon the victim; these feelings can result in bullies feeling increased anxiety and depression (Hinduja & Patchin, 2010; Pajares, 2006; Paradise & Kernis, 2002; Richards & Huppert, 2011; van Geel, Vedder & Tanilon, 2014; Wong, Dirghangi & Hart, 2019).

Successful impression management can enhance both bonding and bridging social capital (McLaughlin & Vitak, 2012; Su & Chan, 2017), and depending on audience response it can be related to self-esteem. When presenting the self online,



individuals have been found to present: (1) the real self (a direct representation of the offline self); (2) the ideal self (an adapted version of the self that reflects idealistic goals); (3) the false self to explore (trailing out selves that do not directly relate to the real self); (4) the false self to compare/impress (presenting an inauthentic self that is shaped by social norms); (5) the false self to deceive (presenting an inauthentic self, often with antisocial goals; Michikyan, Subrahmanyam & Dennis, 2014). Positive feedback to how individuals present the self (through disclosure and posting images, comments, etc.) can enhance self-esteem, particularly when present the real self (Bareket-Bojmel, Moran, & Shahar, 2016; Burrow & Rainone, 2017). When presenting the ideal self, it may encourage the individual to work towards integrating the ideal with the real self (Bareket-Bojmel, Moran, & Shahar, 2016) and also enhance self-esteem (Meeus, Beullens & Eggermont, 2019; Yang & Brown, 2016). Through enhanced self-esteem, wider benefits may be experienced for mental health and wellbeing (Cillessen & Bellmore, 2004; Erwin, 2013; Glick & Rose, 2013; Rubin & Ross, 2012).

However, receiving negative feedback based on how an individual presents the self can be harmful. In particular, when one has presented the real self, negative feedback may impair self-esteem and wellbeing (Bautista & Hope, 2015; Bij de Vaate, Veldhuis & Konijn, 2020; Michikyan, Dennis, & Subrahmanyam, 2015). In terms of the ideal self or the false self to compare/impress, the individual's self-esteem may be further affected as even after manipulation in line with social norms, they still receive negative feedback (Elliot et al., 2000; Michikyan, Dennis, & Subrahmanyam, 2015). McLean, Jarman and Rodgers (2019) identified that, amongst adolescents, negative feedback to selfies in particular impaired wellbeing. Further, Lamp et al. (2019) discovered that increasing image manipulation in line with idealistic goals directly predicted depression. Presenting the false selves, particularly for antisocial purposes, may also reap feelings of guilt (Bauman, Toomey & Walker, 2013), and we know that this can predict anxiety and depression (Hinduja & Patchin, 2010; Pajares, 2006).

Where self-presentation is identified as inauthentic, an individual may be ridiculed (Dredge, Gleeson & De la Piedad Garcia, 2014; Walrave & Heirman, 2010; Willard, 2007). Even if presenting the real self frequently, the individual may enhance their visibility and become more likely to be victimised (Mascheroni, Vincent & Jiminez, 2015). Victimisation is a predictor of low wellbeing and enhanced anxiety and depression (Campbell et al., 2012; Fahy et al., 2016; Reed, Cooper, Nugent & Russell,



2016). Concerningly, those who experience victimisation are more likely to attempt suicide (Hinduja & Patchin, 2010) and endure lifelong mental health difficulties.

2.4 Research focus

In accordance with uses and gratifications theory (Phua, Jin & Kim, 2017), children's SNS behaviours may influence both risky and beneficial outcomes. Amongst adolescent and adult populations, we know that the outcomes of these behaviours have both positive and negative effects upon mental health and wellbeing. SNS use is becoming increasingly popular amongst the iGen (Ofcom, 2019). Yet, an understanding of the iGen's SNS behaviours and to what extent these predict mental health and wellbeing is limited. Research grounded within displacement theory prioritises time spent online as a predictor of poor mental health and wellbeing (Lee, 2009), without due consideration of the specific behaviours. Considering the rise in poor childhood mental health and wellbeing, and the potential long-term effect of this, it is important to consider how the iGen behave when using SNS and to what extent this may be associated with mental health and wellbeing.

This study aims to investigate the ability of the iGen's SNS behaviours over time in predicting self-esteem, wellbeing, and internalising mental health factors (anxiety and depression). Children, aged 7-to-12 years, will report about their online disclosure, social capital, self-presentation and cyberbullying perpetration and victimisation, and will report on their feelings about the self, including self-esteem, wellbeing and mental health. Further, children will make judgements on the amount of time they spend online to consider whether this, too, predicts our outcome variables. This survey will be conducted over two separate time points six months apart during the academic year.

Based upon current findings within the literature, it is expected that rather than time spent online, children's SNS behaviours will predict self-esteem, wellbeing and mental health. Specifically, it is expected that self-disclosure and cyberbullying behaviours will predict poorer self-esteem, wellbeing and mental health. It is expected that self-presentation (to create desired image of the self within their followers) will predict more positive self-esteem, wellbeing and mental health; specifically, presenting the real and ideal self will be related to higher self-esteem, while presenting a false self will be related to lower self-esteem. Further, it is expected that bonding and bridging



social capital behaviours will predict greater self-esteem and wellbeing, but that bridging social capital will predict poorer mental health.

Research to date has focused on SNS use and outcomes with regards to adolescents and adults. The iGen are using SNS too, but it is still unclear as to how they are using SNS and whether this is related to their mental health and wellbeing. Crucially, mental health and wellbeing experiences during childhood can have lifelong effects. Our findings with 7- to 12-year-olds will provide evidence for parents, schools and policymakers to support children appropriately in their digital engagement.

3. Method

3.1 Participants

A sample size of 436 participants were recruited from four schools across the North of England (Stoke-on-Trent) and the South of England (London, Surrey and Essex) at time point one (TP1). At time point two (TP2), 90 participants were unable to complete the study due to being on a school trip. Participants who completed less than 80% of the study were removed. In total, the clean dataset comprised 258 participants with data from both time points completed. Participants were aged between 7 and 12 years of age at TP1 ($M = 9.76$, $SD = 1.19$; 46% female), with 49% identifying as White; 16% as Black; 12% as Asian; 6% as Mixed; 17% selected 'other' or did not respond.

Pupil premium, a government grant provided to schools based on the number of children receiving either free school meals, or living with a family household income below £16,190, within the school (Education & Skills Funding Agency, 2020), was used as a proxy measure for socioeconomic status. The schools we visited covered a wide range of socioeconomic status with the percent of children in the school receiving pupil premium being: Stoke-on-Trent, 46%; London, 29%; Surrey, 24%; Essex, 7%.

Ethical approval was granted through the Royal Holloway Research Ethics Committee, and this study was conducted in line with the ethical guidelines of the British Psychological Society. Parents were provided with full study information via the schools, and were allowed to opt for their child not to take part. All children who were permitted to complete the surveys, provided fully informed consent online prior to taking part.



3.2 Materials and measures

This survey was conducted via the Qualtrics survey platform and took approximately 30 minutes to complete. The study included seven measures, which are outlined below. These measures were constructed in an accessible manner for the age of the participants, also considering the needs of SEN (Special Educational Needs) and EAL (English as an Additional Language) participants; this was achieved by using visual aids (emojis and progress bars) alongside the Likert scales. Responses were made by selecting responses using a mouse for computers/laptops or touchscreen for tablets and were recorded on Qualtrics for later exporting for analyses.

3.2.1 Self-disclosure

Participants completed an adapted version of the Online Self-Disclosure Scale (Schouten, Valkenburg & Peter, 2007) to measure online self-disclosure behaviours including personal feelings (worries, shame and guilt) and secrets. As the original scale was conducted with an adolescent sample, some of the items were rephrased to ensure applicability to our research question (SNS use more generally) and also to ensure appropriateness for the participants' younger age. For example, items referring to 'being in love' and 'sex' were removed. To apply to SNS use, the scale was rephrased from "Imagine a boy/girl whom you regularly communicate with via IM, would you message them about" to ask participants 'In general, would you *post* about...' to ensure that data regarding public disclosure behaviours were collected.

Participants rated items on a 5-point Likert scale ranging from "I tell nothing about this" to "I tell everything about this". Items were forward coded; mean of the item scores were calculated (range 1 to 5) with higher scores indicating greater self-disclosure. Following adaptations, the overall scale presented high internal reliability ($\alpha = .71$).

3.2.2 Social capital

The Bonding and Maintained Social Capital Scales (Ellison, Steinfield & Lampe, 2007) and the Off to Online Scale (Williams, 2006) were used as a basis for a combined scale to measure participants' online bonding and bridging social capital behaviours. These scales were originally conducted with an older adolescent sample (aged 18-24) and were therefore adapted for our younger participants' age range.

Bonding



For bonding, originally, the scale consisted of ten items (Ellison, Steinfield & Lampe, 2007). Of these items, six were removed as they were unrelated to our participants' age group, such as: "The people I interact with would be good job references for me". Four items were adapted; for example, "There is someone I can turn to for advice about making important decisions" was adapted to "If I needed help, there is someone online I could turn to for advice." Two new items were added relating to bonding social capital in groups: "I feel I belong to a group online" and "I feel I am accepted by my groups online".

Participants rated all of these items on a 5-point Likert scale ranging from "I never do this" to "I do this all the time". All of these items were forward coded; mean of the item scores (1 to 5) were calculated with higher numbers indicating greater bonding social capital behaviours. Following all adaptations, this scale presents a high internal ability ($\alpha = .91$).

Bridging

Originally, the scale consisted of four items (Williams, 2006). Of these items, two remained unchanged and two were adapted in order to ensure relevance to our research question. For example, "I have used Facebook to check out someone socially" was adapted to "I have found someone I met in person using SNS".

Participants rated all of these items on a 5-point Likert scale ranging from "I never do this" to "I do this all the time". All items were forward coded; mean of the item scores were calculated (1 to 5) with higher scores indicating greater bridging social capital. Following all adaptations, this scale presented high internal reliability ($\alpha = .83$).

3.2.3 Self-presentation

The SPFBQ (Self-Presentation on Facebook Questionnaire; Michikyan, Subrahmanyam & Dennis, 2014) was used to measure self-presentation behaviours. This scale was originally conducted with an older adolescent sample (aged 18-24) and was therefore adapted for our younger participants' age range.

This scale originally consisted of 17 items; eight items remain unchanged, three items were removed as they did not relate to our participants' age range (e.g., "I have a good sense of what I want in life and using Facebook is a way to express my views and beliefs"), and the remaining six items were adapted to be suitable for our participants' age range. For example, "I have a good sense of who I am and many of the things I do on my Facebook profile is a way of showing that" was adapted to "I like to show who I am online". This resulted in the final scale consisting of 13 items: three items



measuring the real self; two items measuring the ideal self; two items measuring the false self to explore; three items measuring the false self to compare/impress; three items measuring the false self to deceive .

Participants rated each item on a 5-point Likert scale ranging from “not at all true for me” to “always true for me”. All items were forward coded; mean of the item scores were calculated (range 1 to 5) with higher scores indicated greater use of self-presentation behaviours. Following adaptations, the scale presented high internal reliability ($\alpha = .89$).

3.2.4 Cyberbullying

The Cyberbullying Offending and Victimization scales (Hinduja & Patchin, 2010) were included to measure cyberbullying behaviours. The original scale was conducted with preadolescents and adolescents (aged 10-18 years); items were checked and were age appropriate for the 7-year-olds. Items were updated to relate to this study's focus upon SNS use; for example, rather than referring to ‘emails’ items were adapted to refer to ‘direct messages’. Participants were presented with the brief: ‘In the past two weeks have you:’ followed by the items.

Offending

Cyberbullying perpetration (CBP) behaviours were measured via five items. Of these items, two were unchanged and the remaining three were adapted to relate to SNS use. For example, “Sent someone an email to make them angry or make fun of them” was adapted to “Directly sent someone a message to make them angry or to make fun of them”. Participants rated all of these items on a 4-point Likert scale measuring frequency from “never” to “more than three items”. All items were forward coded. Overall mean scores were calculated (1 to 4); higher scores indicated greater cyberbullying perpetration behaviours. Following all adaptations, this scale presented high internal reliability ($\alpha = .93$).

Victimization

This scale consisted of 10 items relating to victimisation (CBV). Nine of these items were adapted and retained, with the addition of one new victimisation item. One item was removed as it did not apply to this study's aim. Participants rated items on a 4-point Likert scale ranging from “never” to “more than three times”. Overall scores were calculated (1 to 4) with higher numbers indicating greater victimisation. All items were forward coded. Following adaptations, the scale presented high internal reliability ($\alpha=.83$).



3.2.5 Self-esteem

Participants completed the Rosenberg Self-Esteem Scale (RES; Rosenberg, 1965) to measure self-esteem, which has been shown to be appropriate for children from 10 years (Bagley & Mallick, 2001; Hagborg, 1996). The scale consists of 10 items (e.g., 'On the whole, I am satisfied with myself'). Participants rated items on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree". Five items were forward coded and five items were reverse coded. Mean item scores were calculated (ranging from 1 to 5) with higher scores indicating greater self-esteem. This scale presented good internal reliability ($\alpha=.73$).

3.2.6 Mental health

Participants completed the Revised Child Anxiety and Depression Scale (RCADS; de Ross, Gullone & Chorpita, 2002) as a measure of feelings and behaviours associated with mental health disorders. This scale comprised 47 items designed for children aged 8 to 18 years; all were unchanged and retained. The scale items measure: major depressive disorder (10 items; e.g., 'I feel sad or empty'); social phobia (nine items; e.g., 'I worry I might look foolish'); panic disorder (eight items; e.g., 'When I have a problem, I feel shaky'); separation anxiety disorder (seven items; e.g., 'I feel scared if I have to sleep on my own'); obsessive compulsive disorder (6 items; e.g., 'I can't seem to get bad or silly thoughts out of my head'); generalised anxiety disorder (6 items; e.g., 'I worry about things').

Participants judged how often each sentence (item) reflects how they feel on a 4-point Likert scale measuring frequency ranging from "never" to "always". All items were forward coded. Summed item scores were calculated for each subscale (range 0 to 30); higher scores indicated greater anxiety and depression. Mean scores were then calculated for all 6 subscales (0 to 3); higher scores indicated greater mental health. This scale presented high internal reliability ($\alpha=.94$). See Appendix L for a full breakdown of this scale.

3.2.7 Wellbeing

Participants completed the Kidscreen 27 Index (2004) scale to measure wellbeing. This scale was designed for children aged 8 to 18 years to assess five elements of wellbeing: physical, mood, family, friend, and school. Each sub-scale was had children judge statements on 5-point Likert scales where the range was relevant for the items (e.g., "poor" to "excellent", "not at all" to "extremely", "never" to "always"). Four items were reverse coded and 23 items were forward coded. Mean of items scores were calculated



(range 1 to 5) with higher scores indicating greater wellbeing. This scale presented high internal reliability ($\alpha=.96$). See Appendix M for a full breakdown of this scale.

3.3 Procedure

Participants completed the survey twice: first in January and again, six months later, in July 2018; a range of 156 to 189 days passed ($M = 178.5, SD = 15.59$) between the first and second time points. The lead researcher on the project led both data collection sessions. At both time points participants completed the survey in groups of 20-30 within their school's ICT suite, with individual desktop computers, or within their own classrooms, using iPads or laptops. Children were seated in a way to ensure that they could not see each other screens. Children were provided with information on the study both verbally and visually before providing their consent. Children were assigned a unique identifier, completed the demographic questions, followed by the set of scales. For participants who were registered as SEN, a member of staff supported them via reading aloud, but were instructed not to provide any further contextual information to the scales. The survey took approximately 30 minutes to complete and was conducted in a silent environment. Participants were verbally debriefed once the whole class had completed the survey and provided with the opportunity to ask questions.

4. Results

4.1 Access

Participants were asked about their SNS ownership and access. Specifically, we asked which sites they have a profile with (SNS ownership), how many internet-connected devices they own and how often they use SNS (SNS access; Livingstone et al., 2011; Mascheroni & Ólafsson, 2014). At TP1, from a range of 0 to 6 SNS profiles owned, 142 (60%) of participants owned an average of one SNS profile ($M = 1.69, SD = 0.95$); at TP2, 168 (69%) of participants owned on average two SNS profiles ($M = 1.98, SD = 1.03$). At TP1, of those who reported owning an SNS profile: 45% had a YouTube profile, 19% a SnapChat profile, 16% an Instagram profile, and 6% a Facebook profile; a further 14 participants indicated that they had an 'Other' profile (e.g., Whatsapp, Roblox, Minecraft), with the remaining participants not specifying. At TP2, of those who reported owning an SNS profile: 94% had a YouTube profile, 55% had a SnapChat profile, 38% had an Instagram profile, 17% had a Facebook profile; a further 77 participants identified that they had an 'Other' profile (e.g., Whatsapp,



Roblox, Minecraft), with the remaining participants not specifying. Further descriptive information is presented within Table 1.

Bivariate Pearson correlations were examined between the main variables at both TP1 and TP2 to assess for multicollinearity; no issues were evident. Tables 2 and 3 presents a breakdown of the descriptive findings per variable and Bivariate Pearson correlations at both TP1 and TP2.

Table 1. Descriptive information (N = 258) depicting frequency of SNS use, location where SNS was accessed and type of devices used to access SNS at TP1 and TP2.

		Time point 1	Time point 2
Frequency of SNS use	Once a week	42	91
	Once a day	35	89
Location of SNS access	At home (not in the bedroom)	175	194
	Bedroom	172	193
	Friend's house	104	128
	School	28	19
	On-the-go	62	70
Devices to access SNS	Mobile phone	126	129
	Laptop	26	31
	Tablet/iPad	26	42
	Desktop computer	11	12
	Gaming device	9	6
	SmartTV	0	0



Table 2. Summary of the mean and standard deviation (SD) scores per variable and Bivariate Pearson correlations between the main variables and age; these are presented for TP1.

	M (SD)	Self- disclosure	Bonding social capital	Bridging social capital	Self- presentation	CBP	CBV	Self- esteem	Wellbeing	Mental health
Age	9.76 (1.19)	-0.04	0.13	0.16	0.10	-0.03	-0.07	-0.01	0.10	-0.08
Self-disclosure (range 1-4)	1.47 (0.86)		0.16*	0.21**	0.26***	0.14*	0.31***	0.05	0.38	0.06
Bonding social capital (range 1-5)	2.92 (1.29)			0.30***	0.25***	0.26***	0.11	-0.67	-0.51	0.07
Bridging social capital (range 1-5)	1.72 (1.07)				0.27***	0.38***	0.21**	-0.09	-0.03	-0.05
Self- presentation (range 1-5)	1.74 (0.78)					0.43***	0.21**	-0.11	-0.06	0.16*
CBP (range 1-4)	1.22 (0.47)						0.22***	<.001	-0.14	0.05
CBV (range 1-4)	1.27 (0.45)							0.06	-0.13	0.14*
Self-esteem (range 1-5)	3.08 (0.59)								-0.10	0.13***



Wellbeing	2.33	-0.05***
(range 1-5)	(1.47)	

*p<.05; **p<.01; ***p<.001



Table 3. Summary of the mean and standard deviation scores per variable and Bivariate Pearson correlations between the main variables and age; these are presented for TP2.

	M (SD)	Self- disclosure	Bonding social capital	Bridging social capital	Self- presentation	CBP	CBV	Self- esteem	Wellbeing	Mental health
Age	10.21 (0.90)	-0.10	-0.03	-0.11	-0.07	-0.14*	-0.07	0.05	0.20**	-0.16**
Self-disclosure	1.31 (0.62)		0.22***	0.28***	0.44***	0.29***	0.26***	0.05	0.04	0.04
Bonding social capital	2.92 (1.28)			0.42***	0.35***	0.29***	0.19**	-0.009	0.05	0.09
Bridging social capital	1.44 (0.76)				0.39***	0.41***	0.22***	-0.06	0.05	0.08
Self-presentation	1.72 (0.75)					0.30***	0.31***	0.10	0.09	0.27***
CBP	1.20 (0.39)						0.27***	-0.08	-0.05	0.11
CBV	1.24 (0.40)							-0.08	-0.04	0.20**
Self-esteem	3.07 (0.53)								0.06	0.22***
Wellbeing	2.93 (1.00)									0.16*



***p<.05; **p<.01; ***p<.001**



4.2 Main analyses

A series of linear mixed effects models were conducted in order to measure SNS behaviours and the predictive relationship between these and self-esteem, wellbeing and mental health (anxiety and depression). We included time point (binary: 1 TP1, 2 TP2) as a random intercept in order to measure whether our outcomes were influenced by time. We also included participant ID as a nested random slope in order to measure whether individual level differences were associated with our outcomes.

Three linear mixed effects models were completed using the lme4 packages in R (Bates et al., 2015) including the lmerTest package to include Satterthwaite's method for calculating significance (Kuznetsova, Brockhoff, & Christensen, 2017). Missing data was dealt with using mean imputation scores via the boot package (Ripley, 2020). Fixed effects of both time points were entered to explore their association with the outcome, these included descriptive variables of age, gender (binary: 0 male, 1 female), private access (binary: 0 did not use SNS in the bedroom, 1 did use SNS in the bedroom), ownership (binary: 0 did not own SNS profile; did own SNS profile) and frequency of use (0 less than weekly, 1 weekly, 2 daily). Further, our main predictors were entered as fixed effects: self-disclosure, self-presentation, bonding social capital, bridging social capital, cyberbullying perpetration and cyberbullying victimisation scores. Including time point as a random intercept allowed us to control for TP1 scores. Table 3 presents a summary of these models.

Due to the five facets of self-presentation behaviours (Michikyan, Subrahmanyam & Dennis, 2015) having been found to have different relationships with self-esteem, further analyses were conducted to explore the relationship between the five types of online self-presentation and self-esteem. A linear regression model was completed using the lme4 packages in R (Bates et al., 2015) including the lmerTest package to include Satterthwaite's method for calculating significance (Kuznetsova, Brockhoff, & Christensen, 2017). Self-esteem was entered as the outcome variable with the real self, the ideal self, the false self to explore, the false self to compare/impress and the false self to deceive scores entered as predictors. Table 4 presents a summary of the findings.



Table 4 Summary of linear mixed effects models with self-esteem, wellbeing and mental health (anxiety and depression) as the outcome variables, random intercept of time point (TP) and participant ID (ID), and fixed effects of descriptive and main variables.

	Self-esteem				Wellbeing				Mental health			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept (TP and ID)	-1.20	3.19	-0.38	0.706	1.54	0.56	2.76	0.006**	-0.44	1.56	-0.28	0.778
Age	-0.05	0.23	-0.20	0.841	0.06	0.04	1.55	0.122	0.06	0.11	0.52	0.605
Gender	-2.12	0.75	-2.81	0.005**	-0.29	0.13	-2.31	0.020*	0.02	0.37	0.05	0.962
Private access	1.89	0.29	6.43	<.001***	0.15	0.05	3.07	0.002**	0.46	0.15	2.99	0.003**
Frequency of SNS use	0.58	0.71	0.82	0.416	-0.23	0.13	-1.84	0.066	-0.004	0.36	-0.01	0.990
Ownership of SNS	-1.38	0.61	-2.27	0.023*	0.37	0.10	3.75	<.001***	0.52	0.26	2.01	0.056
Self-disclosure	-1.01	0.34	-2.97	0.003**	0.04	0.06	0.75	0.454	0.18	0.17	1.05	0.295
Self-presentation	0.93	0.44	2.15	0.032*	0.07	0.07	0.92	0.358	0.02	0.22	0.08	0.934
Bonding social capital	-1.14	0.24	-4.94	<.001***	0.04	0.04	0.95	0.344	-0.04	-0.29	-2.35	0.019*
Bridging social capital	0.83	0.23	3.57	<.001***	0.09	0.04	2.39	0.017*	-0.01	0.12	-0.10	0.921
Cyberbullying perpetration	0.63	0.66	0.96	0.339	-0.04	0.11	-0.33	0.744	0.30	0.33	0.90	0.367



Cyberbullying	-0.40	0.56	-0.72	0.470	-0.06	0.09	-0.65	0.514	0.03	0.28	0.09	0.926
victimisation												

* $p \leq .05$; ** $p < .01$; *** $p < .001$; gender (binary: 0 male, 1 female); private access (binary: 0 does not access SNS in bedroom, 1 does access SNS in bedroom); ownership of SNS (binary: 0 does not own SNS account, 1 owns SNS account).



4.2.1 Self-esteem

When timepoint and child ID were entered as a random intercept, a significant association was not found with self-esteem, suggesting that neither time nor individual differences accounted for any variance in self-esteem scores. Findings show that accessing SNS in private predicted more positive self-esteem. In contrast, being female and owning a SNS profile predicted more negative self-esteem.

In exploring the links of SNS behaviours with self-esteem, findings suggest that self-presentation and bridging social capital positively predicted self-esteem, while self-disclosure and bonding social capital negatively predicted self-esteem. When self-presentation was broken down to explore the relationship between the facets of the self-presentation and self-esteem, the model demonstrated that presenting the false self to explore predicted more positive self-esteem, whilst presenting the real self predicted poorer self-esteem.

4.2.2 Wellbeing

When time point and child ID were entered as a random intercept a significant association was found with wellbeing. In particular, time point accounted for 99% of the variance, suggesting that participant scores varied over time. Child ID accounted for <1% of the variance, suggesting that child ID scores varied over time. Random unexplained effects accounted for <1% of the variance. These findings demonstrate that time point explained the greatest proportion of variance in wellbeing scores.

In exploring the links of SNS behaviours with wellbeing, findings suggest that ownership, accessing SNS in private and greater bridging social capital predicted wellbeing. Whilst gender negatively predicted wellbeing, suggesting that being male predicted higher self-esteem.

4.2.3 Mental health

When time point and child ID were entered as a random intercept, a significant association was not found with mental health (anxiety and depression), suggesting that neither time nor individual differences accounted for variance in mental health.

In exploring the links of SNS behaviours and mental health, accessing SNS in private and bonding social capital positively predicted mental health.

4.2.4 Supplementary findings

Our findings also highlight that presenting the false self to explore positively predicted self-esteem. It has been argued that those high in social anxiety are more likely to present the false self to explore (Lee & Stapinski, 2012; Twomey & O'Reilly, 2017).



To explore this within our findings, we conducted a moderation analyses in R using the lme4 packages (Bates et al., 2015). Self-esteem was entered as the outcome variable with social phobia scores (one of the subscales from the RCADS mental health scale) entered as the predictor variable and the false self to explore as the moderator to assess if the false self to explore moderated the relationship between social phobia and self-esteem. The interaction term accounted for a significant proportion of the variance in self-esteem, $R^2 = 3.2$, $F(3, 248) = 41.18$, $p = .001$, $b = -0.32$, $t(880) = -3.61$, $p < .001$. This suggests that social phobia negatively moderates the relationship between the false self to explore and self-esteem. See Table 5 and Figure 1 for a summary of these supplementary findings.

Table 5. A summary of the linear regression model conducted with self-esteem as the outcome variable and the real self, the ideal self, the false self to explore, the false self to compare/impress and the false self to deceive entered as predictor variables.

Self-esteem				
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept (TP and ID)	13.24	2.17	6.08	<.001***
Real self	-5.32	0.84	-6.36	<.001***
Ideal self	1.22	1.22	1.00	0.318
False self to explore	4.71	0.84	5.61	<.001***
False self to compare/impress	-1.80	1.04	-1.73	0.085
False self to deceive	1.26	0.91	1.38	0.169

* $p < .05$; ** $p < .01$; *** $p < .001$.



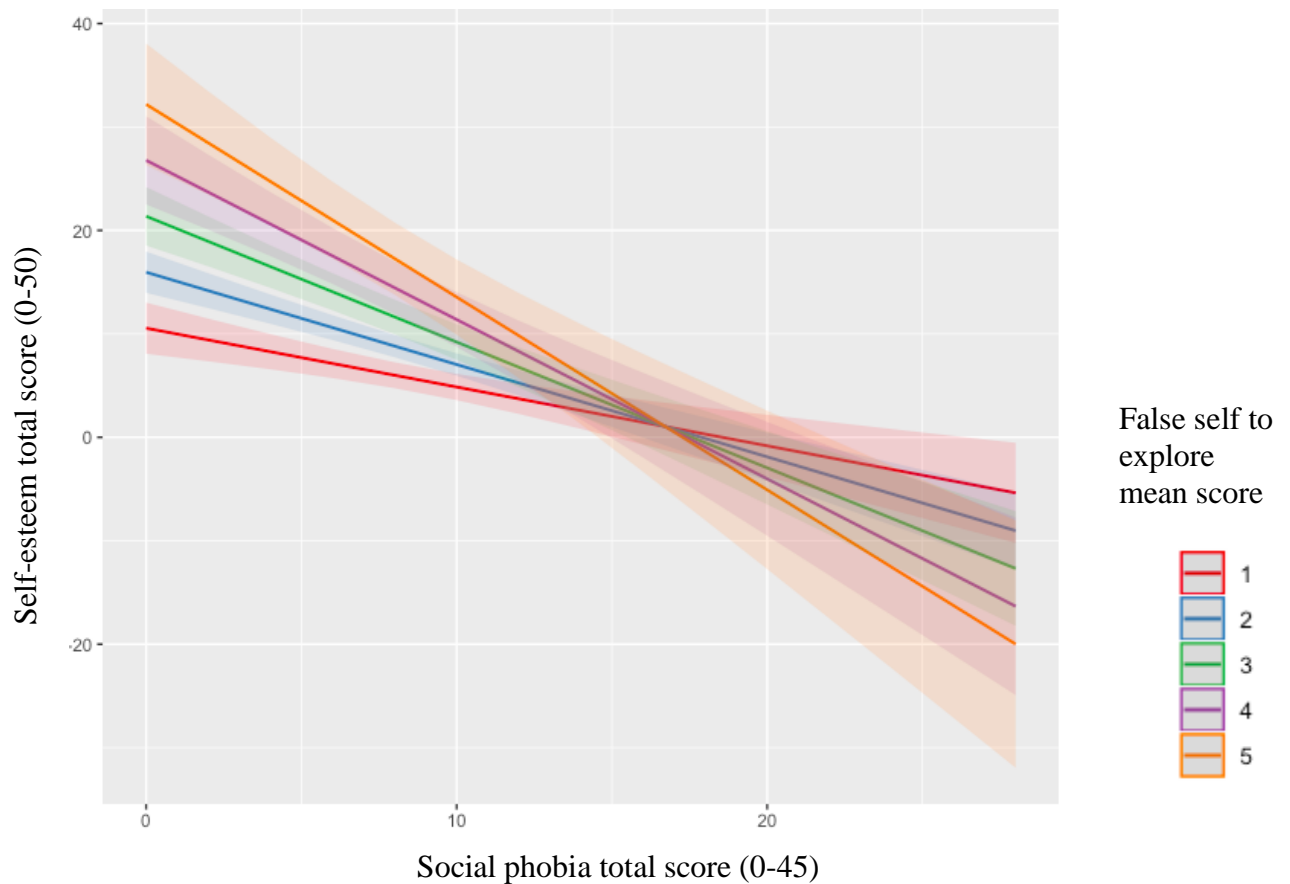


Figure 1. Relationships between social phobia and self-esteem for five scoring levels of presentation of the false self online.

5. Discussion

This study aimed to explore children's, 7-to-12 years, SNS behaviours over time and whether these predicted mental health and wellbeing outcomes. In line with our expectations that online behaviours would predict self-esteem, wellbeing and mental health, we found that self-disclosure, self-presentation, bonding and bridging social capital were significant independent predictors of self-esteem. Further, facets of self-presentation predicted self-esteem in different ways; however, these were contrary to our expectations. However, it was only bridging social capital that predicted wellbeing and bonding social capital that predicted mental health (anxiety and depression). In contrast to our expectations, neither cyberbullying perpetration nor victimisation predicts any of our outcome variables.

In addition to our main research questions, we also investigated SNS access and use with the 7-to 12-year-olds to understand if any of these factors may account for variability in feelings of self-esteem, wellbeing, and A&D. Our findings also identify



that owning an SNS account is risky for self-esteem, but beneficial for wellbeing. Steinfield, Ellison and Lampe (2008) found that those already in low self-esteem benefitted more from SNS use than those already mid-to-high in self-esteem due to the social capital opportunities available online; this may contextualise our findings. Changes over time explained the variance in wellbeing scores, so perhaps SNS use over time benefits wellbeing particularly for those with low self-esteem. We cannot be certain of this from our findings, but it would be interesting to consider in the future. Further, accessing SNS privately within the bedroom also positively predicted self-esteem and wellbeing. Children lack social autonomy in comparison to adolescents and adults (Corsaro, 2015); thus, allowing children the privacy of socialising in their own space may therefore enhance self-esteem. Albeit, private access also increases the risk of mental health; it appears that private access is beneficial but that it does also expose children to risks.

5.1 Time spent online

Frequency of time spent online did not predict self-esteem, wellbeing or mental health scores. As we hypothesised, it appears that children's specific behaviours are influential upon the outcomes, rather than purely the amount of time spent online. This is in alignment with a growing body of research considering online use (LaRose, Eastin & Gregg, 2001; Morgan & Cotton, 2003). In fact, Best, Manktelow and Taylor (2014) report that more contemporary research is moving away from the online displacement theory. Interestingly, Pea et al. (2012) identified that time spent online could be beneficial, especially where children (aged 8-to-12 years) use face-to-face digital communication (e.g., video calling). In alignment with such research, our findings argue that rather than the amount of time children spend online, more research should consider online behaviours.

5.2 Online behaviours

As we expected, self-presentation behaviours predicted self-esteem, albeit not as we expected. The false self to explore, rather than the real self, positively predicted self-esteem. Twomey and O'Reilly (2017) propose that presenting the false self to explore is more likely amongst those high in social anxiety, however, our findings found that those who reported high social phobia were actually less likely to present the false self to explore. Studies have previously identified that those who lack identity cohesion (Schwartz et al., 2009) are more likely to utilise the false selves to explore identities



online (Michikyan, 2020; Michikyan, Subrahmanyam & Dennis, 2015; Valkenburg & Peter, 2011). When we consider childhood as a sensitive period of identity formation (Barrett, 2007) and children's increasing awareness of impression management techniques (Watling & Banerjee, 2007), utilising SNS may provide children with the opportunity to trial out a range of impression management behaviours. Exploring via the false self is anonymous and therefore the child can learn about impressions without fear of judgement (Michikyan, Subrahmanyam & Dennis, 2015). Subsequently, children may feel more confident in managing impressions more broadly, enhancing their self-esteem.

Presenting the real self, on the other hand, negatively predicted self-esteem. Receiving negative feedback can be detrimental upon self-esteem, particularly in response to the real self (Elliot et al., 2000; Michikyan, Dennis, & Subrahmanyam, 2015). In fact, Hu et al. (2017) propose that the anonymity of the online environment encourages people to post the negative true self: "the negative aspects of the true self that conflict with social norms and expectations" (p.4), and this increases the likelihood of negative feedback (Forest & Wood, 2012). Additionally, self-disclosure negatively predicted self-esteem. We know that misjudging online audiences can result in negative feedback (Bazarova et al., 2012). Potentially, children are less successful at judging the appropriateness of their disclosure and to what extent they present the real self online, which may subsequently reap negative feedback and impair self-esteem.

In line with our hypotheses, bridging social capital behaviours positively predicted self-esteem and wellbeing. Within adolescent and adult samples, bridging social capital has been found to enhance self-esteem due to feelings of connectedness and popularity (Ellison et al., 2007; Ellison, Steinfield & Lampe, 2008; Hofer & Auber, 2013). Children are more limited than adults in their opportunities for socialising (Corsaro, 2015); utilising SNS may provide a unique platform for children to broaden their social network. In fact, our findings also highlight that private access in the bedroom positively predicted both self-esteem and wellbeing. Allowing children the privacy to bridge social capital online may be beneficial as they feel more skilled at initiating and forming friendships, a skill which is typically awkward offline (Livingstone, 2007).

Although bridging social capital may be beneficial, bonding social capital negatively predicted both self-esteem and mental health. Bonding social capital is intrinsically tied with trust (Wu et al., 2012). Where a child misjudges trustworthiness,



they may expose themselves to friendship difficulties (Chak & Leung, 2004; Nowicki & Duke, 1992; Parker & Asher, 1987). We know that friendship intimacy becomes increasingly more important from middle childhood (Parker & Asher, 1993) and thus where bonding social capital is unsuccessful, this may have a particularly detrimental effect upon children's mental health. Experiencing this during childhood may relate to children's mental health through adolescence and adulthood and so it is important that children are supported in their online bonding skills.

Contrary to our expectations, neither cyberbullying perpetration nor victimisation predicted either self-esteem, wellbeing or mental health. An explanation for this could be that the relationship between experiences of cyberbullying and mental health outcomes is more nuanced than simply the behaviours or experience themselves. With regards to perpetration, Wegg et al. (2014) found that cyberbullies are often also traditional bullies; in which case, they are merely extending their behaviour and are unlikely to experience any particular change to their self-esteem, wellbeing or mental health. Equally, cyberbullies may gain popularity from their perpetration, but Wegg et al. (2014) identified that this is a short-term benefit and so would be unlikely to enhance self-esteem, wellbeing or mental health. In terms of victimisation, Smith (2012) highlights that coping strategies are particularly influential upon the long-term outcomes. In fact, Völlink et al. (2013) found that particular coping strategies were more effective in mitigating poor mental health outcomes than others. In terms of our findings, these explanations may contextualise the nuances of cyberbullying experiences. Rather than the behaviours themselves, there may be moderating factors that require further consideration.

5.3 Limitations and future directions

Our study does contain some limitations. Our findings highlight that behaviours only changed over time regarding wellbeing scores; this is likely due to the longitudinal design comprising two points at six months apart. It would be useful for future studies to consider the relationship between children's, 7-to-12 years, SNS use and self-esteem, mental health and wellbeing over a longer period of time. In doing so, this may capture a greater breadth of change over time. Further, new SNS are frequently being created; for example, the sudden surge in popularity of TikTok in 2020 has already amassed 850 million accounts (TikTok, 2020). It has been debated whether studies investigating SNS use can maintain relevance (Poynter, 2010; Weller, 2015). Although this could be



viewed as a limitation, it is also argued that all SNS possess the same founding qualities: social focus (Sutcliffe, Binder & Dunbar, 2018); portable nature (Anderson & Jiang, 2018); text and image interactions (Zappavigna, 2016); limitless connectivity (Van Dijck, 2013). Importantly, this suggests that although new SNS may be created, research considering older platforms still maintains applicability to newer platforms. Nevertheless, it would be interesting for future research to consider the iGen's SNS behaviours on newer platforms, such as TikTok.

A great deal of literature considers the fluctuation in females' self-esteem, especially from middle childhood (Alpert-Gillis & Connell, 1989; Bleidorn et al., 2015; Rentzch, Wenzler & Schütz, 2016). Our findings support this as males within our sample reported greater self-esteem and wellbeing than females. It would be interesting for future research to explore the longitudinal association between females' SNS and self-esteem, especially for those who already experience low self-esteem to begin with (Ellison, Steinfield & Lampe, 2008).

5.4 Conclusions

Our study focuses upon children's, aged 7-to-12 years, SNS use and whether this shapes self-esteem, mental health and wellbeing over time. Our findings highlight that exploring online via the false selves as well as bridging social capital are positively associated with self-esteem and wellbeing; whilst greater self-disclosure, presentation of the real self and bonding social capital negatively relate to self-esteem and mental health. Greater time spent online was not associated with self-esteem, mental health or wellbeing. Owning an SNS account and having privacy to access SNS within the bedroom also appear to be beneficial, but it may also expose children to risks. Importantly, allowing children the privacy and social autonomy to explore via SNS may benefit self-esteem and wellbeing. Equally, it appears that children require support in navigating SNS safely. Parents, practitioners and policymakers should consider both the risks and the benefits of children's SNS use and prioritise supporting children within their digital use.



Chapter 7

General Discussion

Throughout this thesis I aimed to explore children's, aged 7-to-12 years, risk and benefit perceptions and behaviours on social networking sites (SNS), as well as the association between these and their social-emotional development. To capture this, both psychological and sociological frameworks have been drawn upon.

Psychological concepts have shaped our understanding of how children are engaging online, how this is associated with risky and beneficial outcomes, and to what extent these predict mental health and wellbeing over time. Sociological concepts have enabled the contextualisation of the psychological findings within children's reality with a deeper understanding of the uniqueness of the iGeneration (iGen; Rosen, 2010). Embedded within this inter-disciplinary approach, the findings of this thesis provide a unique and important focus upon children's SNS use. To address the overall research question of how children use SNS and how this shapes their development, I broke down the topic of children's SNS use to explore the nuances, as well as the greater context, of the iGen's reality. Key findings are highlighted below.

To begin with, it was important to understand the uniqueness of the iGen's engagement with SNS and the digital age more broadly. Rosen (2010) claims that the iGen's experience of growing up immersed within digital technology has shaped their perceptions and behaviours in a fashion never seen before in previous generations. Further, Livingstone and Third (2017) outline the challenges of the iGen's societal influence within adulthood (Corsaro, 2015). The heightened accessibility and portability of digital devices since 2010 arguably segments the iGen's development from adolescents' (Generation Z; Turner, 2015). As well as this, we know that children, aged 7-to-12, have less social autonomy than adolescents (Corsaro, 2015), and this may relate to SNS perceptions and behaviours. To address these notions, Chapter 3 comprised an explorative study of adolescents' SNS risk concern and its relation to perceptions of the benefits; this was embedded within Rogers' (1975; Rogers & Prentice-Dunn, 1997) protection motivation theory, and Wildavsky and Drake's (1990) extension of this to risk and benefit perception. The findings highlighted key notions for consideration of and comparison to children's, aged 7-to-12, own SNS perceptions.



Adolescents perceive online social capital and self-development positively and we see that their concern for the risks is not associated with these. In fact, the more positively adolescents perceive social capital the less positively they view disclosing to family members online. These findings indicate adolescents overall positive perceptions of socialising online. Interestingly, we do see that females are more concerned about the SNS risks and that this concern makes them more positive about disclosing to family members.

Having established the perceptions of adolescents, it was then important to explore children's online behaviours; this was done so in Chapter 4. Before investigating children's perceptions, it was first required to understand children's access to and engagement with SNS and whether these were associated with the risk and benefit outcomes both identified within literature, as well as with the findings in Chapter 3. Quinn and Oldmeadow (2013) identified that some younger children do engage with SNS use and that it informs a sense of belonging. Yet, an understanding of how the iGen are engaging with SNS and what the broader outcomes of this may be remains limited within literature. Within this chapter, self-disclosure and self-presentation behaviours were explored as well as the outcomes of bonding and bridging social capital, cyberbullying perpetration and victimisation, and self-esteem. Findings within this chapter highlight that these 7- to 12-year-olds SNS behaviours are associated (and predict) both risk (i.e., experience cyberbullying) and benefit (i.e., engagement with social capital on SNS) outcomes. Children who reported greater use of self-presentation behaviours were more likely to engage in bonding and bridging social capital online. Further, with greater use of self-disclosure there was more engagement with bridging social capital online, but these children reported more cyberbullying perpetration and victimisation experiences. Although we did not see a relationship between these online behaviours and self-esteem.

Within Chapter 5, it was important to broaden an understanding of children's SNS behaviours by exploring children's own perceptions of SNS risks and benefits. Scott (2000) argues that children's realities lack prioritisation within research. When we consider the potential uniqueness of the iGen (Rosen, 2010) and the fact that we know children, aged 7-to-12 years, are using SNS (from Chapter 4), ensuring that children's reality was appropriately explored was a key focus of this chapter. Adults (specifically parents and teachers) were also incorporated within this study, as they have an important mediational role within children's internet use (Livingstone, 2017);



therefore, gaining an understanding of their perspectives was required as an added element of children's reality. Within this chapter, it became clear that children perceive social capital as the greatest benefits of SNS use, as did adults. Both children and adults viewed stranger danger as the greatest risk, although children appear to echo the comments of adults (i.e., comments reflected what they were taught) rather than voice these risks organically. Importantly, this chapter highlights the influence of internet mediation behaviours (Livingstone, 2017) upon children's SNS behaviours and perceptions.

To explore how children's SNS behaviours were associated with mental health and wellbeing over time, Chapter 6 included a longitudinal study. We know from Chapter 5 that children are motivated to use SNS, and we know from Chapter 4 that children's behaviours are associated with the risk and benefit outcomes in general. In light of this, uses and gratifications theory (Phua, Jin & Kim, 2017) was incorporated as a theoretical framework within this study. Self-disclosure, self-presentation, bonding and bridging social capital, and cyberbullying perpetration and victimisation were important within this chapter as they had been identified as relevant SNS behaviours. Measures of self-esteem, wellbeing and internalising behaviours were also included as literature widely debates the association between these and SNS use (Primack et al., 2017; Thorsldottir et al., 2019). Findings from this chapter demonstrate that online behaviours are associated with self-esteem, this highlights the importance of the nuances of children's SNS behaviours. Further, bridging social capital over time improved wellbeing. Whilst, bonding social capital was negatively associated with internalising behaviours, specially, with greater anxiety and depression. These findings highlight that children's SNS behaviours are indeed associated with risk and benefit outcomes associated with their social-emotional development.

Each chapter within this thesis addresses a core part of our overall research question. In doing so, important concepts have arisen which challenge current perspectives of children's SNS use and broaden understanding of the iGen's reality. Addressing these below, this thesis aims to inform adults, namely parents, educational practitioners and policymakers, about both the risks and the benefits of children's, aged 7-to-12 years, SNS use. Importantly, these findings should be used to support children's digital engagement; rather than limiting children, we should empower them within the digital age.



1. Seven-to-12 year olds' SNS use

It is important to consider the nature of children's SNS use to understand the uniqueness of the iGen. Despite common belief that children, aged under the average SNS age restriction of 13 years, are not using SNS, this thesis highlights that children are regularly accessing these sites. Children are accessing SNS either via their own accounts (clearly bypassing age restrictions to do so) or via co-use with family members. Further, children report accessing SNS mostly within the home, both in either the privacy of their bedroom and within a communal space in the house. Interestingly, we see that digital device ownership is common across children aged 7-to-12 years, particularly mobile phones and tablets, and that these devices nearly always have internet connection. Developing an understanding of children's SNS use has been important within this thesis as it provides a more accurate picture of the realities of children's lives within the digital age.

1.1 Digital device ownership

With the rise of portable, accessible digital devices (e.g., smart phones, tablets), ownership of these has risen sharply over the past decade and we are seeing more and more children with digital device ownership (Ofcom, 2019; Rosen, 2010). My findings also demonstrate this; in particular, children are mostly reporting ownership of mobile phones and tablets. Importantly, within Chapters 4 and 6, the majority of participants report that their devices have an internet connection. Interestingly, within Chapters 3 and 4, I asked participants approximately how old they were when the first used particular digital devices. In Chapter 3, with adolescent (aged 13-to-18) participants, during primary school was where the majority first used the internet. Whilst in Chapter 4, with child (aged 7-to-12) participants, before starting school was the most reported option. These findings support the argument that the iGen are digitally immersed and are engaging with digital devices earlier than previous generations (Rosen, 2010); albeit, it would be interesting to investigate this further.

Potentially, there are two explanations for why we are seeing this increase in children's digital device ownership. Firstly, in line with Rosen's (2010) and Turner's (2015) sociological considerations of generational differences, it may be an example of children's immersion within the digital age. Rosen (2010) argues that expectations for digital engagement are greater now than before, due to the world around us being so digitally shaped. Livingstone and Byrne (2018) extend this by suggesting that



expectations upon parenting are shifting within the digital age, particularly towards ‘positive parenting’: “supporting increasing autonomy, encouraging healthy habits, goal setting, establishing firm rules and consequences” (p.10, De Stone, 2016). As a result of this shift, parents are increasingly allowing their children digital access. In fact, findings from Chapter 5 highlight that parents do indeed feel an expectation to allow their children digital access: “Kerboodle [...] that’s where a lot of their homework is, especially for Science, and I wanted him to get more familiar with using a laptop so his homework is better” (Parent 4). Nevertheless, within Chapter 5, we do see restrictive internet mediation behaviours from parents even where they allow their child some digital access:

‘can you let me look at one of your recent posts,’ there will be an understanding that the answer is yes and if it’s not then I will be going...hmmm...wonder why and then I’ll do it behind your back or by means of technology we have installed in the house. (Parent 13)

This is important to note within my findings as although children may have digital access, this does not necessarily mean that their social autonomy is enhanced.

In consideration of this, the second explanation for children’s increasing digital access may be contextualised by more enabling internet mediation behaviours. Livingstone (2017) proposes that parents with greater digital literacy skills are more likely to present enabling internet mediation behaviours and an example of this is allowing their child digital device ownership. In particular, within Chapter 5, we see that both parents and teachers with greater digital literacy skills are typically more enabling in their internet mediation behaviours:

I don’t have a lot of restrictions on their internet use so...practically, they could go onto just about everything and anything as it goes...don’t necessarily have a problem with that cos I know, I’m very open with them. (Parent 5)

In fact, Terras and Ramsey (2016) propose that children whose household presents high family digital literacy practices are more likely to own their own digital device. My findings extend this further as we also see in Chapter 4 that the majority of children with digital device ownership also report their parents as owning digital devices. From this, we can surmise that these children are most likely growing up within a household where digital device ownership is common.

Importantly, my findings extend Terras and Ramsey’s (2016) proposal that focussed on family digital literacy practices to consider school digital literacy



practices. Within Chapter 5, we see that digital device use is increasing in many schools; for example: “how schools use Twitter to share learning and some schools put writing and things on there and they like looking at all the year 6 writing” (Teacher 6). I argue that the digital literacy environment is related to children’s own digital engagement both within the school and the home. This is important to consider as it enhances the digital embedment of children’s reality.

Importantly, my findings highlight that the iGen are engaging with the digital age, particular in terms of accessing digital devices. The iGen do seem unique in terms of their engagement with digital devices from a young age. We see that digital devices are used within both the home and school environments and thus it is apparent that children are experiencing a digitally immersive reality. It is therefore arguably unsurprising that children are increasingly owning digital devices themselves; this is important to consider in terms of how children are accessing SNS specifically.

1.2 SNS ownership

Throughout this thesis, children’s SNS ownership is reported. Despite the age restrictions averaging 13 years, 7-to 12-year-olds are clearly bypassing these (Livingstone, 2011). In particular, YouTube was the most widely reported SNS owned. Within Chapter 5 of this thesis, when asked about YouTube, many parents and teachers did not view it as SNS. In fact, adults who presented restrictive internet mediation behaviours often demonised the more traditional SNS (e.g., Facebook, Instagram and SnapChat) but then reported allowing their child access to YouTube:

I mean [name of younger child] has just turned 9 and we wouldn’t dream of letting her have one [...] y’know they’ve got YouTube that they all watch now and err, there’s 2 great people that do videos all about MineCraft. (Parent 7)

Perhaps YouTube is not perceived as an SNS due to its similarity to television, which is widely acceptable for children’s use (Lemish, 2007). Within Chapter 5, parents discussed utilising restrictive settings on YouTube in order to limit exposure to inappropriate content; this was called YouTube Kids. Interestingly, this strikes similarities to utilising restrictive settings on televisions. With televisions, parents utilise passwords and restricted channels to limit children’s viewing (Jago et al., 2011). Potentially, the similarity between YouTube and television mitigates the attack on adultism, as adults have used televisions for a long time and thus have the skills to manage children’s engagement with it (Orben, 2020). Importantly, YouTube is a



SNS. As with other SNS, children are able to set up a profile, upload content and communicate with others on YouTube (Khan, 2017). Crucially, my findings (see Chapters 4 and 6) highlight that many children are using YouTube and therefore are engaging with SNS.

Interestingly, the more image-based apps, such as SnapChat and Instagram, were the most widely used SNS, after YouTube. We know that children are more visually stimulated than adults (Hitch & Halliday, 1988; Nardini, Bedford & Mareschal, 2010). Image-based apps rely on visuals far more than text and therefore may appeal more to children. In fact, very few of our participants, throughout the entire thesis, used Facebook or Twitter (which are more text-based). Pujol et al. (2016) found that children who spent at least one hour a week playing video games had more accurate and efficient psychomotor responses to visual stimulation; this is interesting to consider as perhaps children's engagement with image-based apps may strike a similarity to this. Extending on from Pujol et al.'s (2016) research, Holloway, Green and Livingstone (2013) propose that the online environment is symbolic of a play space for children. When we consider the functions of image-based apps such as sharing images with stickers, text and filters, as well as adding stories with interactive polls and music on them, it is reasonable to perceive these as a source of play. Plus, we do see throughout Chapters 4, 5 and 6 that children use image-based apps (such as Instagram and SnapChat) substantially more than text-based apps (such as Facebook). Children may therefore be drawn to these image-based apps as they resemble a stimulating play space. In consideration of this, it is important to then question the privacy of this play space and what this means for children's autonomy.

1.3 Private and public access

The social autonomy of the iGen has arisen as a theme throughout this thesis. Within Chapters 4 and 6, we see that private and public access are associated with established risks and benefits outcomes that have been identified within adolescent populations. Bovill and Livingstone (2001) introduced the term 'bedroom culture' during the rise of portable, accessible digital technologies. As this was before the creation of SNS, the use of computers and televisions for accessing information and opportunities to communicate were discussed; for example, gaining information about fashion via commercial adverts or programmes were seen as useful for developing self-presentation behaviours (Bovill & Livingstone, 2001; Buckingham, 1993). In



particular, the privacy of the bedroom was emphasised as important for accessing this information. With the development of SNS, the privacy of bedroom access enhanced, particularly as SNS provides a unique opportunity for communication (Livingstone, 2007). Having the social autonomy to communicate with friends without parental monitoring is widely reported as important during development, especially during adolescence (Reich, Subrahmanyam & Espinoza, 2012).

My findings extend this further by highlighting the importance of social autonomy for children. Firstly, we see within Chapter 4 that allowing children the privacy of accessing SNS within the bedroom is associated with the benefits of bonding and bridging social capital. Further, in Chapter 6 we see that children's private access within the bedroom is associated with higher self-esteem and wellbeing. These findings are important to note as parents are commonly discouraged from allowing their child private SNS access within the bedroom (Livingstone, 2007). Despite this, in Chapter 4, we also see that allowing such social autonomy is also associated with the risk of cyberbullying victimisation. This raises the question of how children's private SNS access can be safely balanced when parents are not present to mediate.

Albeit, children's public access to SNS use also presents risks. Within Chapter 4, we see that public access is associated with cyberbullying perpetration behaviours. Chapter 1 highlighted self-development as a positive of SNS use, although this may be the case in some scenarios, my findings from Chapter 4 may contextualise the risks of this too. We know from a wealth of research that cyberbullying perpetration often occurs in the presence of bystanders (Barlínsa, Szuster & Winiewski, 2013; Bastiaensens et al., 2014; Song & Oh, 2018). Cyberbullies may perpetrate in the presence of others for social goals (e.g., popularity; Abeele & De Cock, 2013; Wegge et al., 2016). In fact, online disinhibition may encourage this further (Suler, 2004) as the cyberbully (especially if presenting the false self) will not have to experience the consequences of being caught (Barlett, 2017; Barlett, Gentile & Chew, 2016). Although, in Chapter 5, we did not see a longitudinal association between cyberbullying perpetration and mental health outcomes, we know from broader research that being a cyberbully is risky in the long-term (Baldry, Farrington & Sorrentino, 2015; Menesini & Spiel, 2012; Tokunaga, 2010).

Importantly, our findings highlight that children are using digital devices and that private and public SNS access is both beneficial and risky; perhaps,



considerations around co-use may be effective for both the protection and provision of the iGen's social autonomy.

1.4 Co-use

Within Chapters 4 and 5, it appears that family digital literacy practices (Terras & Ramsey, 2016) play a role in children's digital device ownership. The majority of children who own an SNS profile reported their parents also owning a profile. In fact, in Chapter 4, we see many children accessing SNS via their family members' accounts: co-using SNS (Livingstone, 2017). On the one hand, co-using SNS may be beneficial as an enabling internet mediation behaviour; on the other hand, it may limit children's social autonomy.

Within Chapters 4 and 5, my findings demonstrate that children with their own SNS profile were increasingly more likely to experience cyberbullying victimisation and lower self-esteem, respectively. These findings may be contextualised by those of Ho et al. (2017) and Wright (2017) who both found a longitudinal negative association between co-use and cyberbullying victimisation, and Kircaburun et al. (2019) who found that those who owned an SNS profile reported lower self-esteem. Further, in Chapter 5, parents who co-used with their child reported discussing cyberbullying incidences and solving them together: "we've had that where they'll come to me with a message from somebody and...consider...what to do" (Parent 12). Perhaps, co-using may mitigate the risk of experiencing cyberbullying victimisation. Furthermore, those with their own SNS profile may use it to compensate for limited social opportunities offline (Ellison, Steinfield & Lampe, 2008) but subsequently make inappropriate choices about their online behaviour (Steinsbekk et al., 2021). Co-use may support children in their SNS use as they can make informed choices about their online behaviours based upon discussion with their parents (Livingstone, 2017).

Although co-use may be beneficial in mitigating the risks of cyberbullying victimisation and low self-esteem, it may limit children's social autonomy. Within Chapter 4, my findings highlight that those who own an SNS profile were more likely to engage in bonding social capital behaviours. With an adolescent sample, Ahn (2012) reported similar findings suggesting that bonding social capital was benefitted by those with SNS as they were not limited to physical locations only to strengthen their friendships. Additionally, within Chapter 5, children regularly outlined the benefit of bonding social capital via SNS: "if you have a friend who is far away from



you, you can talk to him” (Child 10). Also, within Chapter 6, we see that those who own an SNS profile reported increased wellbeing over a six-month period. These findings align with those of Cerna and Smahel (2009) who also identified a beneficial relationship between SNS use and wellbeing. Collectively, we can see from the findings of this thesis that SNS ownership is also associated with many beneficial outcomes. Importantly, restricting children’s SNS use is associated with less access to the benefits (Livingstone et al., 2017). Therefore, although co-use may mitigate the risks of cyberbullying victimisation and low self-esteem, it may equally limit the benefits of bonding social capital and enhanced wellbeing. Children are socially limited (Corsaro, 2015) and so allowing them the independence to use SNS is important in allowing them social autonomy. It is therefore a fine balance to consider the appropriate integration of both co-using SNS with children whilst also ensuring they have some social autonomy.

2. Exposure to the risks and benefits of SNS use

Throughout this thesis, children’s online behaviours have been explored to understand how they are using SNS and to what extent these are associated with risky and beneficial outcomes. My findings demonstrate that children’s online behaviours are associated with both the risks and benefits of SNS use. This thesis is unique in its exploration of children’s, aged 7-to-12 years, online behaviours and their association with these outcomes. Importantly, this thesis aims to prioritise children’s digital reality. Although it is important to protect children from the risks, it is equally important to empower their engagement with the digital age by ensuring access to the benefits too (Livingstone et al., 2017).

2.1 Social capital

Social capital has arisen as a prominent benefit within this thesis. Within Chapter 1, adolescents’ perceptions of the benefits of SNS use grouped with social capital as a key benefit. In fact, their SNS risk concern did not predict social capital, which emphasises their positive perception of it. This positive perception of social capital extended with child participants (aged 7-to-12), within Chapter 5, who expressed bonding social capital, specifically, as the main benefit of SNS use: “Well it’s like easy to communicate to your friends, so you can always stay in touch” (Child 4). In terms of children’s online behaviours, within Chapter 4 we see that these are associated with social capital outcomes. For example, greater self-presentation



behaviours positively predicted bonding and bridging social capital. In turn, within Chapter 6, we see that children who bond social capital were less likely to report internalising behaviours (anxiety and depression). A great wealth of data supports bonding social capital as a benefit of SNS use; in fact, with adults, Williams (2019) conducted a systematic review including 11 years' worth of empirical data and reported that SNS use provided a unique and effective platform for bonding social capital. Importantly, the findings of this thesis extend current views of online social capital by showing that they also present benefits for 7- to 12-year-olds.

Bonding social capital via SNS appears to be especially beneficial for children who are socially restricted offline (Corsaro, 2015); for example, within Chapter 5, many children identified staying in touch with friends who had moved away as an important motivator for SNS use: “she moved in Year 4 [...] and then we exchanged usernames and then we started talking” (Child 5). We know that privacy is an important component of bonding social capital (Putnam, 1993); supported within my findings in Chapter 4. Therefore, allowing children the social autonomy of privately accessing SNS is important in their access to the benefit of social capital outcomes.

Interestingly, self-disclosure behaviours did not predict bonding social capital within Chapter 4. Rather, presentation of the real self positively predicted this beneficial outcome. We know that children become increasingly aware of impressions of others (Watling & Banerjee, 2007) and we also know that in order to effectively bond social capital a foundation of trust is required (Putnam, 1993). Presenting the real self online is therefore beneficial as it evokes greater feelings of trust between friends (Taddei & Contena, 2013; Wang & Emurian, 2005). Children's online self-presentation behaviours therefore provide a beneficial opportunity for managing friendships.

In contrast to the findings in Chapter 4, in Chapter 6 I found that presentation of the real self negatively predicted self-esteem. Although this has been positively linked with bonding social capital (see Chapter 4), it may not always be beneficial; for instance, how one presents the self may backfire should feedback from others be negative (Elliot et al., 2000; Michikyan, Dennis, & Subrahmanyam, 2015). In particular, the anonymity of the online environment may encourage children to present the negative true self (Hu et al., 2017), which may reap negative feedback. In which case, self-esteem may be impaired as the child may acknowledge their



unsuccessful impression management. This provides us with important information about educating children on appropriate online presentation of the self.

Further, within Chapter 6, we also see that greater bonding social capital behaviours independently predict low self-esteem. Interestingly, Ellison, Steinfield and Lampe (2008) found that those with initially low self-esteem benefitted from SNS use more so than those with mid-to-high self-esteem, as they were able to explore social capital more successfully. Perhaps, this contextualises these findings in that children with lower self-esteem are more likely to use SNS as they seek social opportunities.

As well as the benefits of bonding social capital, we see within Chapters 4 and 6 that bridging social capital is also a beneficial aspect of SNS use. Interestingly, within Chapter 5, many adults identified their children bridging social capital online as a risk, however this thesis outlines that bridging social capital can be particularly beneficial. Within Chapter 4, we see that greater self-disclosure and self-presentation behaviours positively predict bridging social capital, and then in Chapter 6 we see that bridging social capital predicts greater self-esteem and wellbeing. We know that bridging social capital via SNS provides adults with the opportunity to practise skills required for introducing the self and managing impressions positively (Ellison, Steinfield & Lampe, 2007; Steinfield, Ellison & Lampe, 2008, 2012). This thesis extends from previous research as it suggests that children may also be able to use SNS to develop these skills. When we consider children's social inexperience (Carpendale & Lewis, 2004) the affordance of time and space online to practise these skills may be especially useful for children.

Offline, children are limited in opportunities to make new friends (Corsaro, 2015), whereas online children can meet mutual friends or join groups and communities and bridge social capital (Johnson & Ambrose, 2006; Mesch & Talmud, 2010; Wright & Li, 2011). Indeed, communicating with strangers does present a risk, particularly if a child is conversing with an adult (Gámez-Guadix, Borrajo & Almendros, 2016), but the children within Chapter 5 were very vocal about how to protect themselves from interacting with strangers. In terms of the findings from this thesis, despite the fears of stranger danger, bridging social capital did not predict poor outcomes in mental health or wellbeing. Importantly, this highlights that bridging social capital does present a benefit to children's social-emotional development and this should be considered by adults, rather than focusing on stranger danger.



2.2 Cyberbullying

The risk of engaging in cyberbullying perpetration, as well as exposure to cyberbullying victimisation, arises within this thesis. Within Chapter 4, we see that children's online behaviours are associated with these risks. Self-disclosure behaviours online positively predict both cyberbullying perpetration and victimisation. A great deal of literature has found, amongst adolescents, a relationship between online self-disclosure and cyberbullying victimisation (Alim, 2017; Valkenburg & Peter, 2011; Weber, Ziegele & Schnauber, 2013). Peluchette et al. (2015) argue that extraverts are more likely to experience cyberbullying victimisation as they engage with a broader range of SNS functions (e.g., posting, commenting, sharing) than introverts and in doing so increase their visibility to cyberbullies. In fact, within Chapter 5, children who expressed actively using SNS also identified how this has exposed them to cyberbullying: "he had a YouTube channel and we made like a video [...] it's quite hard not to get bullied, you're probably going to get bullied for something that you don't even think is that bad" (Child 1). These findings therefore extend previous research regarding self-disclosure and cyberbullying victimization as they highlight that children, aged 7-to-12 years, also experience this risk. Importantly, these findings identify that children are engaging in online behaviours that expose them to cyberbullying victimization and this requires further consideration to support children in safeguarding themselves.

Literature to date has predominantly considered self-disclosure as a risky behaviour for experiencing cyberbullying victimization, however, the findings within this thesis also identify an association between online self-disclosure and cyberbullying perpetration. Within Chapter 4, greater self-disclosure behaviours predict cyberbully perpetration. Barlett and Helmstetter (2018) conducted a longitudinal study with adolescents; they found that online disinhibition did predict cyberbullying perpetration, but not consistently over time. My findings may explain this. Research widely identifies that online disinhibition predicts cyberbullying perpetration (Wang et al., 2020; Wright, Harper & Wachs, 2019). Rather than disinhibition alone, though, it could be argued that it is the act of self-disclosure which predicts cyberbullying perpetration. Self-disclosure is fuelled by online disinhibition as it provides the individual with more time and space to craft disclosure (Suler, 2004). Definitions of cyberbullying outline that the harm is repeated as



opposed to occurring only once (Hinduja & Patchin, 2008, 2010; Smith, 2008; Tokunaga, 2010). Individuals may feel online disinhibition and engage in online aggression, which may contextualise Barlett and Helmstetter's (2018) findings, whilst self-disclosure is more likely to result in cyberbullying as the cyberbully will disclose frequently in order to perpetrate (Tokunaga, 2010). Importantly, this thesis presents self-disclosure as predictive of cyberbullying perpetration and future research should consider this rather than online disinhibition alone.

Interestingly, despite much research investigating the relationship between self-presentation behaviours and cyberbullying experiences, the research findings presented in this thesis do not support this. Perhaps this is suggestive of more relational cyberbullying. Relational bullying considers harmful in-group behaviours, such as spreading rumours or social exclusion (Smith, 2014). A growing body of research is arguing that relational bullying and cyberbullying overlap (Bauman, 2007; Chan & Wong, 2020; Kokkinos & Voulgaridou, 2017; Ortega-Baron et al., 2017). In fact, using confirmatory factor analysis and structural equational modelling, Johansson and Englund (2020) found that relational bullying and cyberbullying were very closely correlated. This may explain my findings because self-presentation behaviours may neither increase visibility to cyberbullies nor enhance perpetration. For example, Chan and Wong (2020) describe social exclusion as a form of relational cyberbullying; this is likely to be motivated by a victim's self-disclosure behaviours being perceived unfavourably by the group (Bazarova, 2012) rather than how children present the self. Furthermore, Sarna and Bhatia (2017) identified that relational cyberbullying is most likely to occur between individuals who know each other offline, in which case online self-presentation behaviours are irrelevant as the cyberbully knows the victim already. It would be interesting for future research to explore the intricacies of children's, aged 7-to-12, cyberbullying experiences.

2.3 Social-emotional development

The qualitative findings within this thesis contextualise the quantitative findings by providing a broader context around children's reality. In particular, there are associations between social post-panopticism, the monitoring of children's social behaviour via technical means (Boyne, 2000; Livingstone, 2016), and children's participation within the digital age, exploring further the notion of adultism (Corsaro, 2015; Qvortrup et al., 2009). In support of this, adults' internet mediation behaviours



may shape not only children's SNS perceptions and behaviours but also children's access. My findings support the notion of social post-panopticism, as discussed within Chapter 1, as adults' perceptions and behaviours are predominantly rendering children as passive within their digital engagement. Adults' fear of the corruption of childhood strongly influences their internet mediation behaviours; within Chapter 5 it was found that adults frequently state that they are less concerned about adolescents' SNS use compared to children's: "we wouldn't dream of letting her have one until she's at least in her teens" (Parent 7). In considering the findings of Chapter 6, as well as those regarding self-esteem in Chapter 4, it is apparent that social post-panopticism is associated with children's social-emotional development.

Adults are fearful of children bridging social capital online, specifically due to the risks of stranger danger. Ironically, in Chapter 6 it was found that children's bridging social capital behaviours are related to beneficial outcomes; positively associated with self-esteem and wellbeing. This relationship between bridging social capital, self-esteem and wellbeing is representative of children's online freedom. Offline, children lack opportunity for forming new friendships (Corsaro, 2015), but online children have endless opportunities. Further, children are able to explore groups and communities potentially broadening their hobbies and interests (Ren, Kraut & Keisler, 2007; Ridings & Gefen, 2004). These opportunities empower children, thus benefitting their social-emotional development (supported in Chapter 6). Yet, adultist fears are restricting opportunities for children (Bell, 1995). Within Chapter 5, even enabling parents restricted their child's bridging social capital behaviours online. Predominantly, this was achieved via restrictive software and limiting children's online networks to only friends known offline: "I do make sure that their security is friends only" (Parent 9). Children echoed these fears. Children frequently outlined the risks of bridging social capital (specifically stranger danger) and how they would implement strategies to avoid this. This demonstrates that adultist fears fuelling social post-panopticism are manifesting within restrictive internet mediation behaviours and these are associated with children's SNS perceptions and behaviours. In doing so, adults are limiting children's access to the beneficial outcomes upon their social-emotional development.

In fact, adults' attempt to protect children may be unintentionally exposing them to the risks. In Chapter 4 it was shown that children's online self-disclosure behaviours predict bonding social capital. When embedding this within adults' fear of



bridging social capital, perhaps children feel safe to self-disclose online as only their known contacts can see. However, Chapter 6 highlights that online self-disclosure and bonding social capital can be detrimental upon self-esteem and mental health. Lulled into a false sense of security, children may perceive their online network as trustworthy for they are not bridging social capital (in line with adults' instructions; Bryce & Fraser, 2014). Children may misjudge this trustworthiness and, in an attempt to bond social capital, they may over-disclose and receive negative feedback (Koutamanis, Vossen & Valkenburg, 2015). Failing to perceive the more nuanced risks associated with friendships, children may be unintentionally exposing themselves to these risks and Chapter 6 identifies that this is associated with self-esteem and mental health. By focusing so much on stranger danger risks, adults are failing to prioritise the more relevant risks, namely self-disclosure amongst known contacts, and are subsequently not educating children appropriately about these. As a result, children are shaping their SNS behaviours in a fashion to adhere to adults' instructions and are thus missing opportunities for the benefits and being exposed to the risks.

Additionally, despite adults frequently discussing children's digital presence being intrinsically linked with responsibility and authenticity online, it was found that children's online self-presentation behaviours differ to adults. Within Chapter 3, my findings highlight that adolescents perceived self-development behaviours as beneficial; one aspect of self-development may be related to impression management. Within Chapter 4, children reported use of self-presentation behaviours online was positively associated with self-esteem. In contrast the findings presented in Chapter 4, within Chapter 6 findings show that the presentation of the real self is associated with negative (lower) self-esteem and that the false self to explore is in fact associated with more positive (higher) self-esteem. It is known that children use the online environment as a play space (Holloway, Green & Livingstone, 2013) and so exploring false selves online is potentially an extension of make believe and imaginative offline play. As aforementioned, children may place too much trust on their online social network and receive negative when they present the real self; explaining the findings around the real self and self-esteem within Chapter 6. Again, this suggests that adults' perceptions are framing internet mediation behaviours which recommend responsibility, such as presenting the real self, and avoiding engaging in false selves. Yet, my findings state that the very opposite of this.



Collectively, these findings present a misalignment between adultist fears and children's reality. Adults are especially fearful of stranger danger and embed digital presence within responsibility and privacy. In doing so, adults are failing to prioritise broader, and more relevant, risks to children. Although children are becoming increasingly more active within the digital age, adults' fears are rendering them passive within their SNS use via social post-panopticism.

3. Implications

The findings of this thesis present important implications upon children's SNS use. Firstly, throughout this thesis, it was found that children aged below the average age restriction of 13 years are accessing SNS. These findings are important to consider as they highlight that children are easily bypassing the age restrictions in order to engage with SNS. Even where children are not bypassing the age restrictions, they are co-using with their family members. Rather than claiming children cannot use SNS because of the age restrictions, adults should acknowledge that children are able to use them and in doing so are exposed to both risks and benefits.

In terms of the risks, this thesis demonstrates that children's online behaviours are exposing them to the risks of cyberbullying in the short-term as well as greater internalising behaviours in the long-term. In particular, self-disclosure and bonding social capital behaviours are predictive of these risky outcomes. Importantly, children require support in safeguarding themselves against these risks. Particularly, learning about disclosing safely as well as managing friendships more effectively may empower children in their online social autonomy. Although it is known that restrictive internet mediation may minimise these risks, this thesis also identifies that these online behaviours are associated with benefits, in which case children require the skills to protect themselves without minimising their ability to participate within the digital age.

With regards to SNS use benefits, this thesis identifies that children's online behaviours are associated with the benefits of bonding and bridging social capital, and that bridging social capital predicts higher wellbeing over time. By engaging with SNS, children are able to develop their social autonomy and actively engage with the digital age. The implications of this are important. Children require support from adults to safely use SNS in order to access these benefits. Rather than focusing on the



risks and subsequently restricting children's digital engagement, adults should also consider the benefits.

Specifically, the implications of this thesis relate to internet mediation behaviours for both parents and teachers. Considerations of the relevant risks and benefits to children's, aged 7-to-12, lives should inform guidance for parenting as well as educational practice. Parents require more information about the benefits and risks (not just stranger danger) as well as an understanding of the role of family digital literacy practices. E-safety policy require a broader and more balanced approach to educating children about the risks and benefits, and this requires standardisation across UK schools.

3.1 Strengths of this thesis

This thesis is unique in its consideration of 7- to 12-year-olds, whose SNS use is restricted until the age of 13 years. Throughout the research presented in this thesis it is clear that, despite these restrictions, children are using SNS. Children are accessing SNS and their online behaviours are associated with the risks and benefits; in fact, some of their online behaviours predict self-esteem, mental health and wellbeing outcomes over time. When considering the ever-changing rapid pace of the digital age, it is expected that digital technologies will evolve further. Expecting children, aged 7-to-12 years, to not engage with the digital world around is both unreasonable and impossible. Children are immersed within the digital age and they are accessing the digital technologies around them. This thesis demonstrates that engaging with SNS, in particular, presents both benefits and risks for children. Importantly, this should be acknowledged and appropriately incorporated into the practices of parents and educational practitioners, as well as considerations within policy, to ensure that children are empowered within the digital age rather than hindered.

A particular strength of this thesis is the prioritisation of children's voices. Within previous research, with children of primary school age in particular, children have often not been specifically asked for their responses. Often, parents or teachers provide responses on the children's behalf; especially where the child's reading ability is low. Adults often project their reality onto children and children often adapt their responses in the presence of adults. The combination of these provides invalid data which does not truly reflect the reality of the child. Within a digital age, children are more active within social constructionism and are contributing to societal



development far more than they have done so in the past. Within an adultist society, this evokes fear as children are perceived as vulnerable and passive. It is important to consider this in conjunction with the fact that adults have previously provided data on children's behalf, it is reasonable to question how accurately our understanding of children's reality really is. This has been a key consideration within this thesis. To ensure that children's reality is appropriately and accurately explored, many considerations have been made within both the theoretical and methodological approaches. Ensuring that children have had the provision to fully participate within the research of this thesis has ensured the validity of these findings. Importantly, the findings presented within this thesis accurately reflect the reality of children's lives within the digital age.

Furthermore, this thesis has incorporated a mixed methods approach which, particularly with the aim to prioritise children's voices, is a strength. By utilising a mixed methods approach, embedded within interdisciplinary constructs, a contextualised understanding of children's reality has been developed. As aforementioned, adults project their reality onto children, so it was therefore crucial within this thesis that not only were children asked about their reality, but that they were asked in a manner that was appropriate for them. To do this, both quantitative and qualitative methods were incorporated to ensure that children had the opportunity to present their reality in full. Also, the use of qualitative methods enabled the development of a broader contextual understanding of children's digital reality. Indeed, the quantitative data is important in understanding the relationships between children's SNS behaviours and the risk and benefit outcomes, but this thesis ensured that this was embedded within relevant context. By using this mixed methods approach, this thesis has been able to develop a broad, nuanced understanding of children's digital reality. Importantly, this ensures that an accurate picture is formed about children's SNS use.

In consideration of this mixed methods approach, another strength of this thesis is within the incorporation of a longitudinal design. We know that the digital age is always rapidly evolving. Further, we know that children's development is fast-paced and that new experiences and opportunities are always occurring. In consideration of this, it was important for this thesis to capture the longitudinal nuances of children's SNS behaviours. This design also allowed for the consideration of later outcomes of children's SNS use. Understanding how SNS behaviours may



relate to children's development over time was important in this thesis, as this provides important information about how the digital age may shape children's social-emotional development and in turn, their future. As the iGen present a uniqueness to generations past, we do not know for certain how embedment within the digital age will shape their adolescence and adulthood. By incorporating this longitudinal design, however, we have the foundations of understanding this more. This is a particular strength of this thesis as, again, it embeds the theoretical and methodological components within children's reality and what is important for them.

3.2 Limitations of this thesis and future directions

This thesis does present some limitations. In particular, due to the focus being on 7- to 12-year-olds use and behaviour on SNS, many scales required adaptation in order to ensure age appropriateness as studies within this age group are very limited. Further, scales required adapting to relate to SNS use, rather than internet use in general. Nevertheless, these adaptations mean that the measures incorporated within Chapter 4 and 6, in particular, are not widely used within research. Also, this means that these scales have not been pre-validated and tested for validity by other researchers. In light of this, it is important to consider how accurately these adapted versions capture certain theoretical notions. All of these scales were piloted and tested for internal reliability presenting high alpha scores. Though, it would still be useful for future studies to use these measures within a range of different populations to explore that validity further.

Another age limitation concerns the grouping of participants aged 7-12 years. As outlined within this thesis, participants were grouped in this manner due to being aged below the average age restriction as well as being in a similar U.K. educational system. However, children at either end of this age group vary in their development and social freedom. Children aged 11-12 years in the U.K., for example, are either in middle school or the first year of secondary school (depending on their county's education system) and are therefore engaging in more autonomous social experiences with more independence away from their parents than 7-year-olds. The heterogeneity across this group's social autonomy may limit the generalisability of findings to all children in the age range. Importantly, age was controlled for when exploring outcomes and was not incorporated as a moderator of associations between predictors



and outcomes. Future research should break down these ages in order to understand the nuances of SNS use across childhood.

Throughout this thesis, children have identified the use of broader SNS (e.g., Minecraft, Music.ly). Although a focus was placed upon the traditional SNS (Facebook, Instagram and SnapChat), participants may have responded with other SNS in mind. The features of SNS vary and so utilising them for social purposes may broadly differ across SNS. Importantly, we are seeing increasing homogeneity across SNS in terms of their features; for example, YouTube has developed features such as profile photos, comments and direct messages, which are conventionally associated with traditional SNS. In relation to this, it would be beneficial for future research to consider the features of SNS broadly rather than focusing on specific sites.

Alternatively, some children did not access SNS whatsoever. Within Chapter 4, only children who reported accessing SNS were included within the analyses in order to ensure that the findings reflected actual SNS behaviours. It would be interesting for future research to consider children's online behaviours and the association with outcomes that are risky and beneficial regardless of their SNS ownership. This would provide us with a broader understanding of how children's online behaviour in general may be associated with the risks and benefits, rather than purely SNS use.

Another methodological limitation to this thesis is with regards to Chapter 6. Within the longitudinal study, children's experiences of cyberbullying were measured, however we did not find a relationship between these and the mental health and wellbeing outcomes. Perhaps this is due to the relatively short period of time between each time point (six months). As mentioned within Chapter 2, these time points were strategically chosen based upon both theoretical and methodological reasons, such as ensuring children were settled within the academic year and for availability of access. Nevertheless, research which has investigated the relationship between SNS, cyberbullying and mental health often takes place across a series of years (Fahy et al., 2016; Lester, Cross & Shaw, 2012; Mishna et al., 2016). Especially when the nuances of relational cyberbullying are considered (Chan & Wong, 2020), it may take a greater length of time for the effects of these to be experienced. It would be useful for future research to replicate the longitudinal design but over a greater length of time. For instance, it has been shown that the effects of cyberbullying can be long-lasting across adolescence and even into adulthood; a three-year longitudinal



study conducted by Festl et al. (2017) found associations between SNS use and mental health outcomes. However, it must be noted that associations between cyberbullying and mental health outcomes are not always found; Schemer et al. (2020) conducted secondary data analyses on a dataset with responses over seven years, finding no association between SNS use and mental health outcomes. In response to these mixed findings, it may be especially worthwhile exploring SNS use and cyberbullying over a greater length of time with children, aged 7-to-12 years.

Importantly, research needs to be designed to identify what children specifically see as risky and beneficial outcomes of SNS use. Within Chapter 5, children did vocalise their perceptions, but these were largely shaped by the vignettes presented. Even where children did vocalise their own risk and benefit perceptions more generally, these were typically limited to stranger danger concerns and may be related to adults shaping children's perceptions and behaviours around stranger danger concerns. Within Chapters 4 and 6, scales considering known risks and benefits (predominantly from adolescent and adult literature) were incorporated. It would be useful for a scale to be created based upon children's own risk and benefit perceptions. This could be achieved by interviewing children about risks and benefits via a less structured approach. Children's responses could then be used to create a scale, which could be piloted with diverse groups of children. By doing this, items would directly reflect children's reality and these could be compared with adolescents' and adults' perceptions.

Furthermore, it would be useful to explore children's understanding of risks and benefits. Although this thesis did assess children's perceptions and, within Chapter 5, some exploration of children's understanding took place, the studies presented here are unable to present a clear representation of what children understand about the risks and benefits of SNS use. Perceptions and understandings are not always aligned; for example, Bryant (2017) debates at length how children develop perceptions mostly by inference. In consideration of this, children may perceive SNS risks and benefits, but this does not necessarily mean that they understand them. In particular, this does not mean that they understand the outcomes of these risks and benefits. It would be useful for future research to explore children's understanding of SNS risks and benefits. For example, children could be presented with images or recordings of risky or beneficial online behaviour; following this they could be asked to explain what the behaviour entails, whether it is risky or beneficial



and why. This would be useful in building a bigger picture of not just how children are behaving online and how this is associated with outcomes, but also why they are behaving in this manner and how children, themselves, conceptualise their own behaviours. Furthermore, this would be useful for training practitioners about the relevant risks to children.

It is also important to consider children's understanding regarding their participation. Although I prioritised the UNRC's three Ps throughout my methodology, via a mixed methods approach and scale adaptations, some children may still have misunderstood some of the items presented within questionnaires and may have responded in a way that does not reflect the underlying construct being measured. In this work, I used validated scales, some with minor adaptations following piloting with children for clarity of the items; the reliability for scales used was good indicating that this may not have been a large problem within my participant groups. Future work using participatory action research is being increasingly used with developmental samples to overcome this limitation (Horgan, 2017; Lees et al., 2017). It would thus be interesting for future research to involve children within the methodology via such an approach in order to explore their SNS perceptions and behaviours in greater depth.

In extension to children's understanding, selection bias may effect the sample used within this thesis. All schools selected an opt-out consent approach, which was beneficial in ensuring a range of participants, as we know that social and cultural factors can impact parental responses. Yet, due to the focus of this thesis upon SNS, some children may have been reluctant to participate due to understanding the age restrictions around SNS use. It is therefore important to consider the potential implications of this upon my findings, as well as for future research.

4. Conclusions

This thesis aimed to explore children's, aged 7-to-12 years, risk and benefit perceptions and behaviours on SNS, as well as the relationship between these and their social-emotional development. This focus was embedded within an interdisciplinary approach combining both psychological and sociological constructs within a mixed methods design. This approach was taken in order to ensure children's digital reality was appropriately explored. Additionally, developing an understanding



of children's digital reality was important in contextualising our findings appropriately. The studies presented within this thesis have identified that children, aged 7-to-12 years, are engaging with SNS and that their online behaviours are associated with both the risks and the benefits. In particular, self-disclosure behaviours are associated with the risks of cyberbullying experiences, but also the benefits of social capital. In fact, bridging social capital is associated with enhanced wellbeing over time. Self-presentation behaviours are associated with the benefits of social capital, but also the impairment of self-esteem. My findings also highlight that both private and public access to SNS presents risks and benefits. It is crucial that adults are informed about the realities of children's SNS engagement and that they can access both risks and benefits. Importantly, children require support in appropriate self-disclosure and self-presentation behaviours. If children are more informed about utilising these behaviours safely, they can be allowed some private access to SNS. By educating children about these behaviours, we can empower them within the digital age.



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Appendices

Study one – adolescent’s SNS use

Appendix A. Original risk concern scale items and adapted items.

Original items (Buchanan et al 2007)	Adapted scale	M(SD)
In general, how concerned are you ...		
about your privacy while you are using the internet?	about your privacy while you are using SNS?	2.65 (1.33)
that people online not being who they say they are?	about people online not being who they say they are?	2.79 (1.38)
that information about you could be found on an old computer?	about your profile ever being hacked?	2.63 (1.39)
about people you do not know obtaining personal information about you from your online activities?	about people you do not know obtaining personal information about you from your online activities?	1.16 (1.22)
that an email you send may be read by someone else besides the person you sent it to?	that a direct message you send may be read by someone else besides the person you send it to?	2.47 (1.27)
that an email you send someone may be inappropriately forwarded to others?	that a direct message you send someone may be inappropriately forwarded to others?	.84 (1.37)
about emails you receive not being from whom they say they are?	about direct messages you receive not being from whom they say they are?	2.55 (1.36)
about online organisations not being who they claim they are?*	about a comment or ‘like’ you post being misinterpreted?	2.09 (1.19)
that you are asked for too much personal information when you register or make online purchases?*	that a comment or ‘like’ you post could cause someone else offence?	2.24 (1.33)
about online identity theft?*	that your online activity could be viewed negatively by a future employer?	2.39 (1.37)

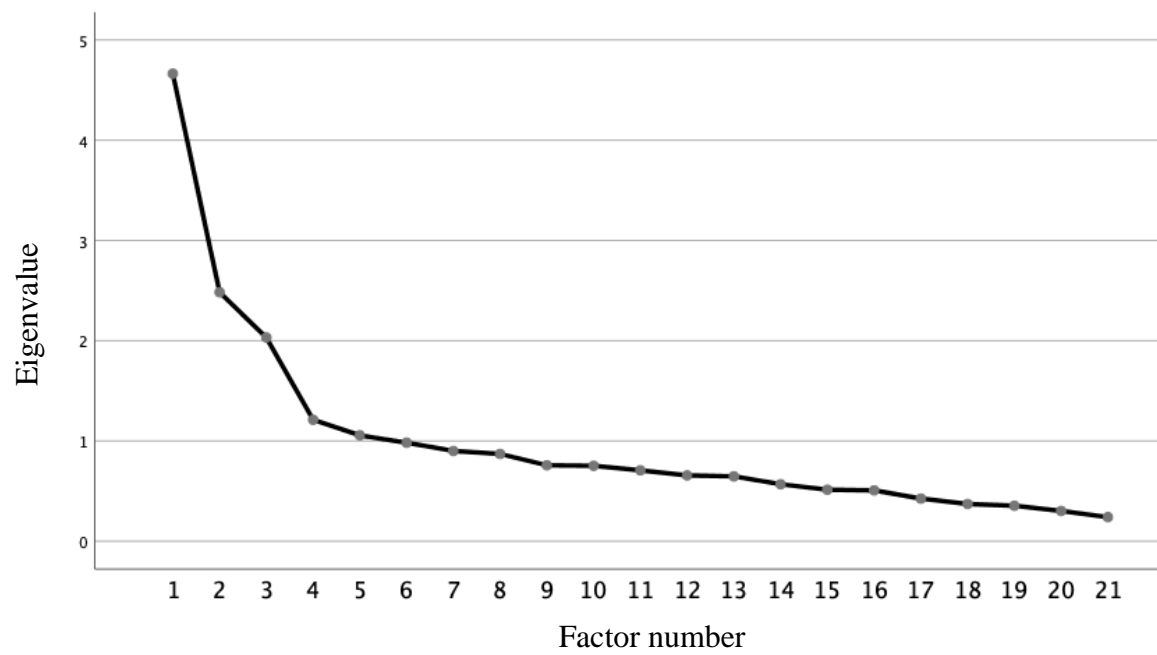


about who might access your medical records electronically?*	about how other people may perceive you as a person based upon your online profile(s)?	2.24 (1.27)
that if you use your credit card to buy something on the internet your credit card number will be obtained/intercepted by someone else?*	by how much time you spend on SNS in general?	2.51 (1.27)
that if you use your credit card to buy something on the internet your card will be mischarged?*	by how much time you spend on SNS instead of studying?	2.53 (1.21)
that an email you send someone may be printed out in a place where others could see it?*	about other people seeing the photos you post?	1.97 (1.17)
that a computer virus could send out emails in your name?*	about people you don't know seeing the photos you post?	2.40 (1.34)
that an email containing a seemingly legitimate internet address may be fraudulent?*		

Note: Items scored in the same direction as 1 ('not at all'), 2 ('somewhat'), 3 ('neither concerned nor unconcerned'), 4 ('very') and 5 ('extremely'); *deleted items.



Appendix B. Factor analysis; scree plot presenting factors above Kaiser's criterion of 3.0.



Appendix C. Factor analysis; cluster loadings of risk and benefit perceptions task items above the value of 2.0.

Item	Factor 1	Factor 2	Factor 3
9	.598		
10	.574	-.129	
27	.564		
8	.535		
3	.516		
15	.506	-.137	
6	.493	.145	.127
16	.453		-.154
7	.426	.179	
4	.361		-.190
2	.347		-.269
13	-.183	.732	-.149
30	.130	.717	
5	.201	.648	
19	-.177	.587	-.222
21			-.725
11			-.708
22	.134	.106	-.524
12	.181	.136	-.516
1			-.482
14	.208		-.449

Study two – children’s SNS behaviours

Appendix D. Original self-disclosure items and adapted items, with descriptive information per item.

Original items (Schouten, Valkenburg & Peter, 2007)	Adapted scale	M (SD)
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Imagine a boy/girl whom you regularly communicate with via IM. How likely are you to message them about:	Imagine a boy/girl who you are friends with on Facebook/Instagram/SnapChat. How likely are you to message/post** them about:	
Personal feelings	How you feel	2.22 (1.47)
The things I am worried about	Things you are worried about	1.86 (1.30)
My secrets	Your secrets	1.45 (0.99)
Moments in my life I am ashamed of	Things you have done and don't want anybody to know about	1.49 (1.05)
Moments in my life I feel guilty about	Things you have done and feel bad about	1.73 (1.26)
Being in love*		
Sex*		

Note: All items scored from 1 (I tell nothing about this) to 5 (I tell everything about this), with higher scores indicating over-disclosure; *deleted items; **participants presented with these items twice regarding 'direct message' and 'post' separately.

Appendix E. Original social capital items and adapted items, with descriptive information per item.

Original social capital scale	Adapted scale	Sub-scale	M (SD)
(Ellison, Steinfield & Lampe, 2007; Williams, 2006)			
I have used Facebook to check out someone I met socially.	I have found someone I met in person by using Facebook/Instagram/SnapChat.	Bridging	1.51 (0.16)



I use Facebook to learn more about other people in my class.	I have learnt more about people in my class by using Facebook/Instagram/SnapChat.		1.62 (0.18)
I use Facebook to learn more about other people living near me.	I have learnt more about people living near me by using Facebook/Instagram/SnapChat.		1.51 (0.17)
I use Facebook to meet new people.	I have made new friends by using Facebook/Instagram/SnapChat.		1.61 (0.16)
I feel I am part of a community at [uni from survey].	I feel I have lots of friends on Facebook/Instagram/SnapChat.	Bonding	2.65 (0.09)
	I feel I belong to a group on Facebook/Instagram/SnapChat.		2.40 (0.17)
	I feel I am accepted by my groups on Facebook/Instagram/SnapChat.		2.51 (0.10)
There are several people I trust at [uni from survey]	I have lots of friends online who I trust.		2.61 (0.08)
If I was in an emergency, I know someone at [uni from survey] I could turn to.	If I needed help, I know someone online who I could ask.		2.51 (0.11)
There is someone at [uni from survey] I can turn to for advice.	I have friends on Facebook/Instagram/SnapChat who I can turn to for advice.		2.51 (0.38)



I would be able to
find out about
events via someone
on Facebook.*

I use Facebook to
keep in touch with
my old friends. *

If I needed to, I
could find someone
on Facebook to do
a favour for me.*

I do not know
anyone at [uni from
survey] well
enough to get them
to do anything
important.*

Note: All items scored from 1 (I never do this) to 5 (I always do this), with higher scores indicating greater social capital in general and for bridging and building separately; *deleted items.

Appendix F. Original self-presentation items and adapted items, with descriptive information per item.

Original scale (Michikyan, Subrahmanyam & Dennis, 2014)	Adapted items	Sub-scale	M (SD)
I sometimes try to be someone other than my true self on Facebook.	I sometimes try to be someone other than my true self on Facebook/Instagram/SnapChat.	False self to deceive	1.48 (0.10)



I am a completely different person online than I am offline.	I am a completely different person online than I am offline.		1.61 (0.03)
I post information about myself on my Facebook profile that is not true.	I post information about myself on my Facebook/Instagram/SnapChat that is not true.		1.52 (0.10)
I have a good sense of who I am and many of the things I do on my Facebook profile is a way of showing that.	I like to show who I am on Facebook/Instagram/SnapChat.	Real self	1.84 (0.17)
Who I am online is similar to who I am offline.	Who I am online is similar to who I am offline.		2.17 (0.12)
I like myself and am proud of what I stand for and I show it on my Facebook profile.	I am proud of myself and like to show this on Facebook/Instagram/SnapChat.		1.87 (0.11)
I feel like I have many sides to myself and I show it on my Facebook profile.	I show different sides of me on Facebook/Instagram/SnapChat.	False self to explore	1.64 (0.12)
I change my photos on my Facebook profile to show people	I change my photos to show different sides of who I am on Facebook/Instagram/SnapChat.		1.64 (0.07)



the different aspects of who I am.			
I compare myself to others on Facebook.	I compare myself to others on Facebook/Instagram/SnapChat.	False self to compare/impress	1.46 (0.05)
I try to impress others with the photos I post of myself on my Facebook profile.	I try to impress others with the photos I post of myself on Facebook/Instagram/SnapChat.		1.58 (0.14)
I only show the aspects of myself on Facebook that I know people would like.	I only show the sides of me online that I know other people will like.		1.76 (0.15)
I post things on my Facebook to show aspects of who I want to be.	I post photos online to show who I would like to be.	Ideal self	1.72 (0.04)
Who I want to be is often reflected in the things I do on my Facebook profile (e.g. status posts, comment, photos, etc.)	The things I do online show who I would like to be.		1.81 (0.12)
Sometimes I feel like I keep up a front on Facebook.*			
I have a good sense of what I			



want in life and
using Facebook is
a way to express
my views and
beliefs.*

The way I present
myself on
Facebook is how I
am in real life.*

On Facebook I
can try out many
aspects of who I
am much more
than I can in real
life.*

Note: All items scored from 1 (Not at all true for me) to 5 (Always true for me), with higher scores indicating higher self-presentation; *deleted items.



Appendix G. Original self-esteem items and adapted items, with descriptive information per item.

Original scale (Rosenberg, 1965)	Adapted items	M (SD)
On the whole, I am satisfied with myself.	On the whole, I am happy with myself.	4.02 (1.05)
At times, I think I am no good at all.	At times, I think I am no good at all.	2.64 (1.31)
I feel that I have a number of good qualities.	I feel that there are lots of good things about me.	1.98 (1.05)
I am able to do things as well as most other people.	I am able to do things as well as most other people.	2.46 (1.18)
I feel I do not have much to be proud of.	I feel I do not have much to be proud of.	2.21 (1.25)
I certainly feel useless at times.	I certainly feel useless at times.	2.75 (1.32)
I feel that I'm a person of worth, at least on an equal plane with others.	I feel that I'm as good as others.	2.63 (1.25)
I wish I could have more respect for myself.	I wish I could have more respect for myself.	2.95 (1.34)
All in all, I am inclined to feel that I am a failure.	I feel like a failure.	1.95 (1.12)
I take a positive attitude towards myself.	I feel good about myself.	2.02 (1.08)

Note: Items one, three, seven and 10 were forward coded and items two, five, six, eight and nine were reverse coded, with higher scores indicating greater self-esteem.

Appendix H. Original cyberbullying items and adapted items, with descriptive information per item.

Original scale (Hinduja & Patchin, 2010)	Adapted items	Sub-scale	M (SD)	n of 'yes'
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Posted something online about another person to make others laugh.	Posted something about another person to make others laugh.	Perpetration	1.67 (0.83)
Sent someone computer text message to make them angry or to make fun of them.	Posted about someone to make them angry or to make fun of them.		1.60 (0.80)
Took a picture of someone and posted it online without their permission.	Posted a picture of someone without their permission.		1.53 (0.77)
Posted something on MySpace or similar site to make them angry or to make fun of them.	Directly sent someone a message to make them angry or to make fun of them.		1.36 (0.70)
Sent someone an email to make them angry or to make fun of them.	Directly sent others a picture of someone without their permission.		1.58 (0.77)
One or more of the above, two or more times.	Have any of the above things happened more than once? Yes/No		77
Received an instant message	Received an upsetting message	Victimisation	1.39 (0.80)



that made you upset.	from someone you know.	
Been made fun of in a chat room.	Been made fun of online.	1.29 (0.73)
Received an upsetting email from someone you didn't know.	Received an upsetting message from someone you didn't know.	1.19 (0.58)
Had something posted about you on another web page that made you upset.	Had something posted online about you that made you upset.	1.21 (0.62)
Had something posted about you online that you didn't want others to see.	Had something posted about you online that you didn't want others to see.	1.72 (0.56)
Been picked on or bullied online.	Been picked on or bullied online.	1.24 (0.67)
Been afraid to go on the computer.	Been afraid to go online.	1.27 (0.67)
Received an upsetting email from someone you know.	Received an upsetting photo from someone you didn't know.	1.09 (0.43)
	Receiving an upsetting photo from someone you know.	1.17 (0.54)
One or more of the above, two or more times.	Have any of the above things happened more	297



than once?

Yes/No.

Had something
posted on your
MySpace that
made you upset.*

Note: All items scored from 1 (Never) to 4 (More than three times), with higher scores indicating greater perpetration and victimisation; *deleted item.



Appendix I. Digital literacy items with descriptive information per item.

Digital literacy items	M (SD)
Click the stars to show me how confident you feel about...	
Finding where the settings are.	3.31 (0.04)
Changing the settings on Facebook/Instagram/SnapChat	3.23 (0.34)
Changing your profile to private on Facebook/Instagram/SnapChat.	3.37 (0.14)
Blocking contacts on Facebook/Instagram/SnapChat.	3.29 (0.06)
Unfriending contacts on Facebook/Instagram/SnapChat.	3.23 (0.07)

Note: All items were scored from 1 (Not at all confident) to 5 (Very confident), with higher score indicating greater perceived digital literacy.

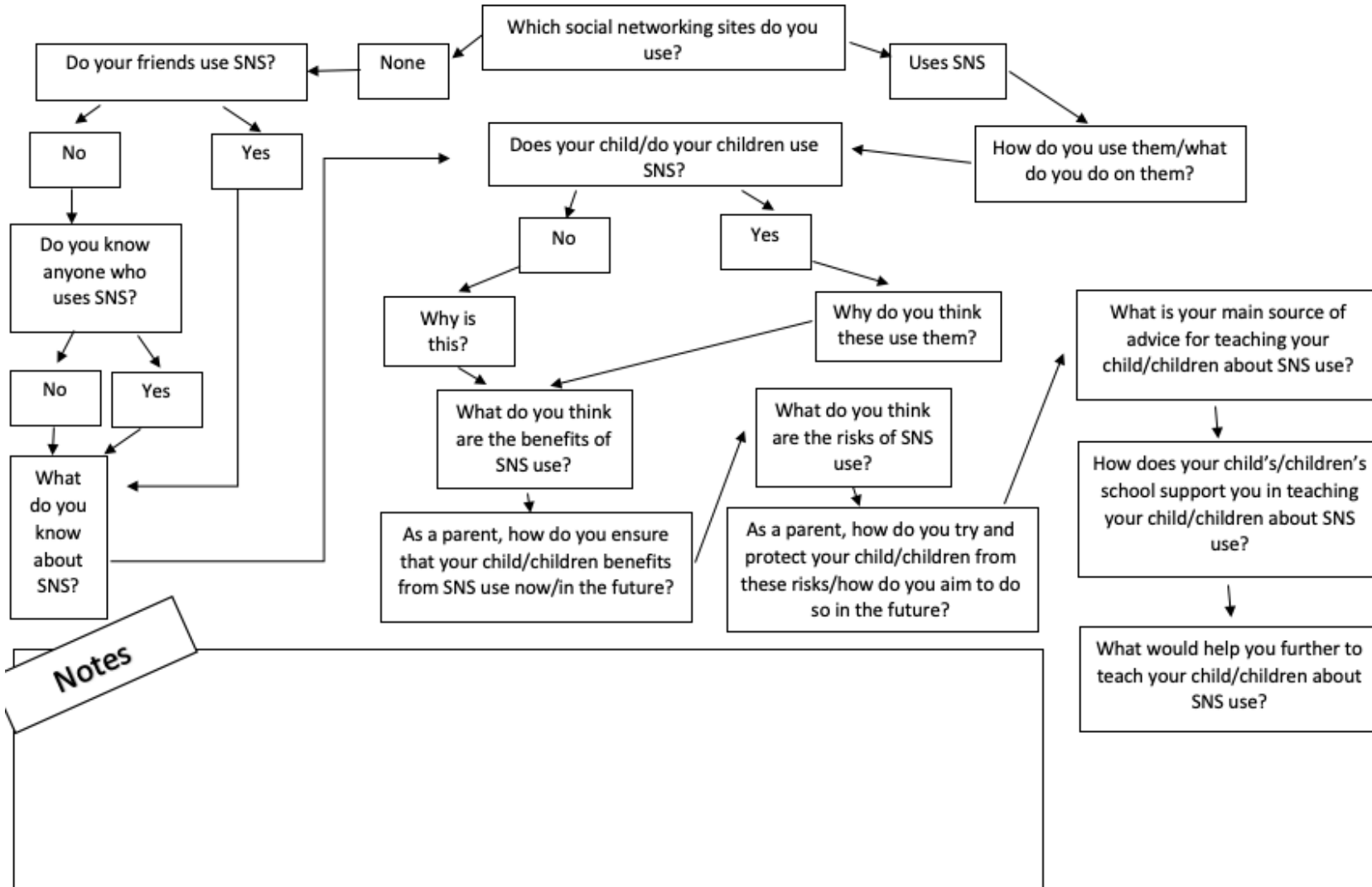


Study three – children’s, parents’ and teachers’ perceptions

Appendix J. Interview flow chart: Parents.

Parent’s interviews

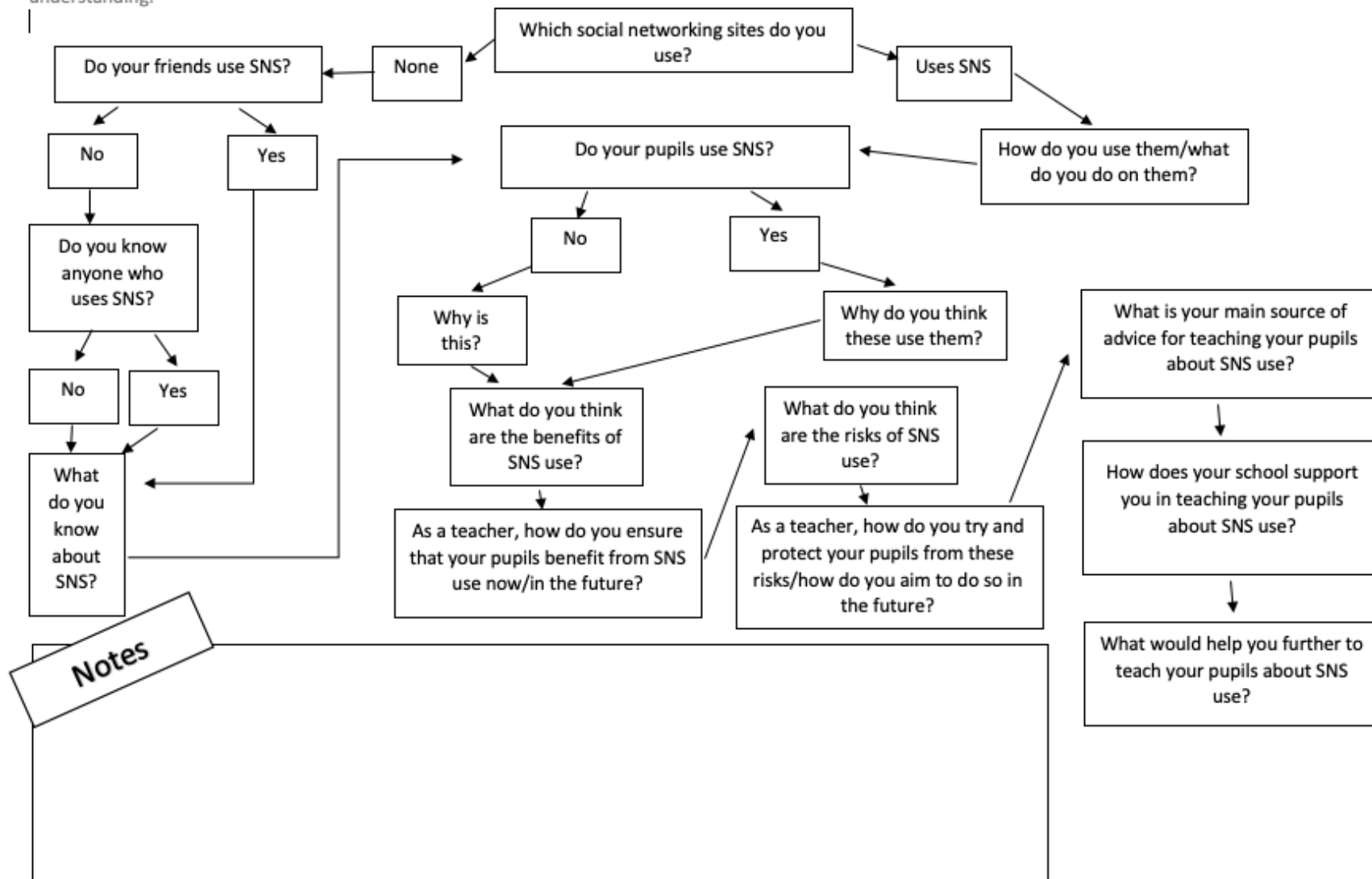
Aim: To understand what children perceive as risky and beneficial about social networking site use. / To explore how parents mediate their understanding.



Appendix K. Interview flow chart: Teachers.

Teacher's interviews

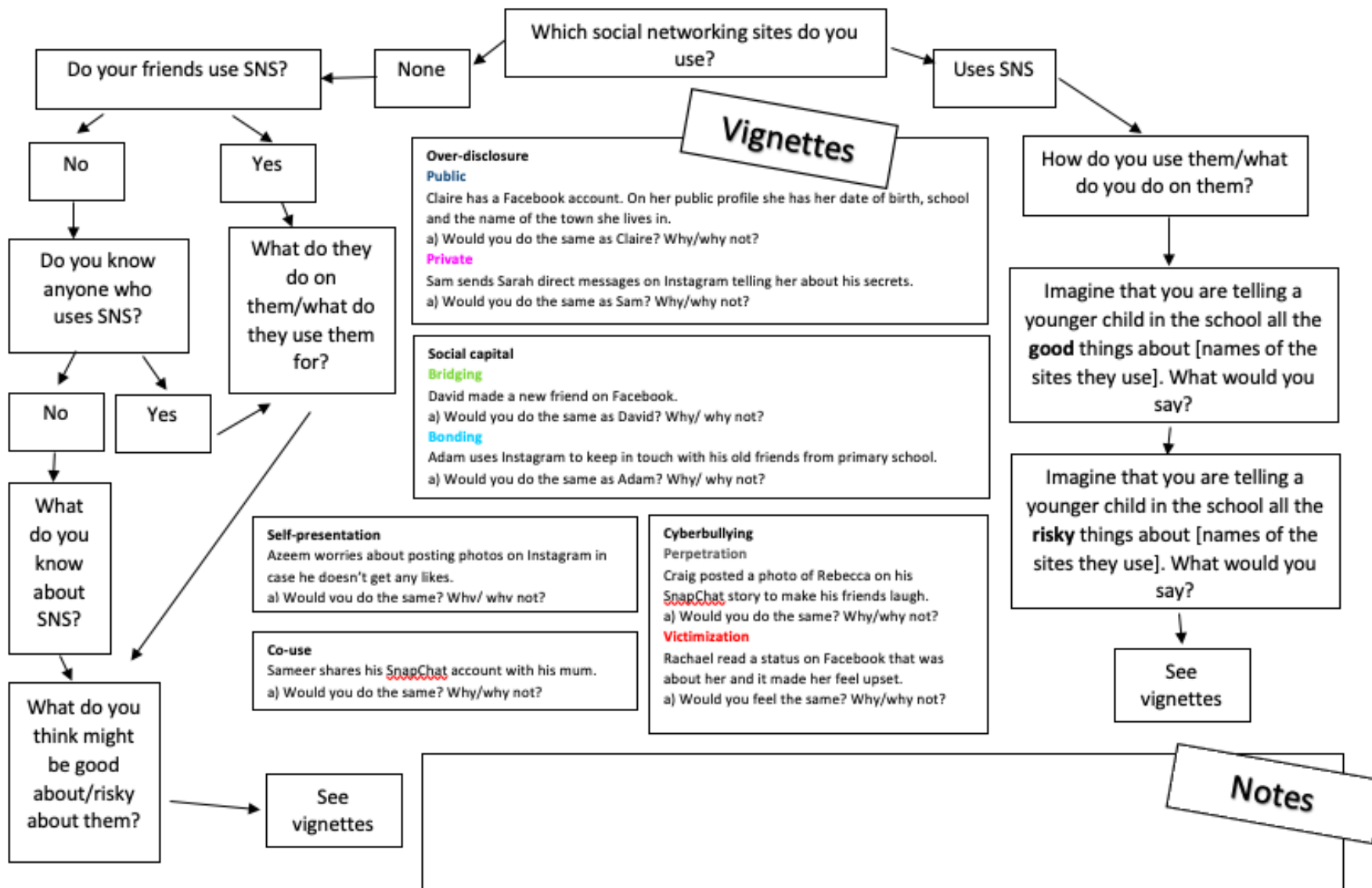
Aim: To understand what children perceive as risky and beneficial about social networking site use. / To explore how teachers/e-safety mediate their understanding.



Appendix L: Interview flow chart: Children.

Children's interviews

Aim: To understand what children perceive as risky and beneficial about social networking site use.



Study four – children’s mental health and wellbeing outcomes

Appendix M. Anxiety and depression items with combined descriptive information across both time points per item.

RCADS (de Ross, Gullone & Chorpita, 2002)		M (SD)
Generalised Anxiety Disorder (GAD)	I worry about things	1.55 (0.83)
	I worry that something awful will happen to someone in my family	1.84 (0.98)
	I worry that bad things will happen to me	2.02 (1.04)
	I worry that something bad will happen to me	1.50 (0.82)
Major Depressive Disorder (MDD)	I worry about what is going to happen	1.48 (0.85)
	I think about death	1.36 (0.79)
	I feel sad or empty	1.89 (0.79)
	Nothing is much fun anymore	1.53 (0.88)
	I have trouble sleeping	1.75 (1.04)
	I have problems with my appetite	1.54 (0.90)
	I have no energy for things	1.43 (0.83)
	I am tired a lot	1.70 (0.95)
	I cannot think clearly	1.95 (1.07)
	I feel worthless	1.70 (0.93)
Panic Disorder	I feel like I don’t want to move	1.38 (0.79)
	I feel restless	1.57 (0.87)
	When I have a problem I get a funny feeling in my stomach	1.87 (0.97)
	I suddenly feel as if I can’t breathe when there is no reason for this	2.09 (1.01)



	When I have a problem, my heart beats really fast	1.74 (1.04)
	I suddenly start to tremble or shake when there is no reason for this	1.66 (0.81)
	When I have a problem, I feel shaky	1.85 (1.00)
	All of a sudden I feel really scared for no reason at all	1.54 (0.86)
	I suddenly become dizzy or faint when there is no reason for this	1.79 (0.99)
	My heart suddenly starts to beat too quickly for no reason	1.85 (1.04)
	I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	1.65 (0.92)
Social Phobia	I worry when I think I have done poorly at something	2.08 (1.00)
	I feel scared when I have to take a test	1.95 (0.97)
	I feel worried when I think someone is angry with me	2.11 (1.06)
	I worry that I will do badly at my school work	2.13 (1.12)
	I worry I might look foolish	1.50 (0.84)
	I worry about making mistakes	1.50 (0.86)
	I worry what other people think of me	1.51 (0.88)
	I feel afraid if I have to talk in front of my class	1.85 (0.99)
	I feel afraid that I will make a fool of myself in front of people	1.72 (0.95)
Separation Anxiety Disorder (SAD)	I would feel afraid of being on my own at home	1.88 (1.08)
	I worry about being away from my parents	2.27 (1.10)
	I feel scared if I have to sleep on my own	1.94 (1.09)



	I have trouble going to school in the mornings because I feel nervous or afraid	1.60 (0.95)
	I am afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds)	1.91 (1.05)
	I worry when I go to bed at night	1.58 (0.88)
	I would feel scared if I had to stay away from home overnight	1.58 (0.92)
Obsessive Compulsive Disorder (OCD)	I am bothered by bad or silly thoughts or pictures in my mind	2.27 (1.10)
	I have to keep checking that I have done things right (like the switch is off, or the door is locked)	1.48 (0.82)
	I can't seem to get bad or silly thoughts out of my head	1.86 (1.00)
	I have to think of special thoughts (like numbers or words) to stop bad things from happening	1.93 (0.98)
	I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	1.72 (1.05)
	I have to do some things in just the right way to stop bad things from happening	1.55 (0.90)

Note: All items scored from Never (1) to Always (4); higher scores indicate higher anxiety and depression.

Appendix N. Wellbeing items and adapted items with with combined descriptive information across both time points per item.

Kidscreen 27 Index (2004)	Likert scale	M (SD)
In general, how would you say your health is?	Excellent to poor	2.77 (1.64)



Have you felt fit and well?	Extremely to not at all	3.14 (1.75)
Have you been physically active (e.g. running, climbing, biking)?		3.22 (1.80)
Have you been able to run well?		2.04 (2.24)
Has your life been enjoyable?		2.00 (2.20)
Have you been happy at school?		1.81 (2.05)
Have you got on well at school?		3.25 (1.78)
Have you been able to pay attention?		3.21 (1.79)
Have you got along well with your teachers?		3.49 (1.85)
Have you felt full of energy?	Always to never	3.03 (1.79)
Have you been in a good mood?		3.02 (1.74)
Have you had fun?		3.38 (1.86)
Have you felt sad?		1.99 (1.38)
Have you felt so bad that you didn't want to do anything?		1.69 (1.42)
Have you felt lonely?		1.70 (1.37)
Have you been happy with the way you are?		3.23 (1.90)
Have you had enough time for yourself?		3.02 (1.84)



Have you been able to do the things that you want to do in your free time?	2.999 (1.83)
Have your parent(s) had enough time for you?	3.07 (1.89)
Have you parent(s) treated you fairly?	3.45 (1.96)
Have you been able to talk to your parent(s) when you wanted to?	3.33 (1.93)
Have you had enough money to do the same things as your friends?	2.70 (1.84)
Have you had enough money for your expenses?	2.83 (1.87)
Have you spent time with your friends?	3.23 (1.93)
Have you had fun with your friends?	3.48 (1.95)
Have you and your friends helped each other?	3.44 (1.93)
Have you been able to rely on your friends?	3.25 (1.94)

Note: All items scored from 1 to 5; higher scores indicate greater wellbeing.

