

***Doctorate in Professional Educational,
Child and Adolescent Psychology***



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**The views and experiences of adolescents with
'communication and interaction needs' of using
communication technologies: a small-scale qualitative
study.**

UCL Institute of Education

**Doctorate in Professional Educational Child and Adolescent
Psychology**

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Student Declaration

I hereby declare that, except where explicit attribution and citation is made, the work of this thesis is entirely my own.

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Abstract

Background

Communication technologies can provide children and young people (CYP) with communication and interaction needs novel opportunities for social interactions. Initial studies suggest that communication technologies can provide unique, virtually enabled social opportunities for CYP with communication and interaction needs due to adaptability features and ability of technology to suit unique communicative styles (van Schalkwyk et al., 2017; Zilka, 2018).

Research Aim

This study explored how adolescents with communication and interaction needs used technology to access social opportunities as well as what types of support they found most useful in regard to online activity. The study adds to current understanding by directly exploring the experiences of 8 adolescents with communication and interaction needs and their own experiences of using communication technologies.

Research design

Descriptive data about participants main reasons for using communication technologies was collated using an online survey. Semi-structured interviews were then used to explore the reported experiences and perceptions of eight adolescents who have identified communication and interaction needs and use technology to socialise. Thematic analysis was used to analyse the transcripts within each case, and then across the aggregated cases.

Key findings

The findings from this study suggested participants valued the autonomy with which they could participate in social interactions online, as well as the choices they could make related to their own personal interests. Synchronous communication with new and existing friends was important to participants and was viewed as valuable social time. However, increased opportunities for social interaction also presented increased chances of misinterpreting online communication and others' intent, which related to feelings of upset and instances of cyberbullying. Social support from family members, such as parents and elder siblings, were described to be valuable in dealing with online harm and managing negative experiences effectively. The relevance of such findings and the implications for schools and educational psychologists are considered. The thesis concludes with future directions for study.

Impact statement

Participants comprised of 2 adolescents with Speech, Language and Communication needs (SLCN) and 6 participants with a diagnosis of Autistic Spectrum Condition (ASC). Findings from this research highlighted that:

- Participants used specific technology to suit their communication and social needs (e.g., to have control over who they interact with, how and when) and this was viewed as a positive benefit of technology. For adolescents with ASC who might have specific fixed interests, online networks and communities may be able to provide some sense of social acceptance. Online communities are vast which means it is almost always possible to find another profile online with similar interests to their own. This potential for social acceptance also applies to those experiencing marginalised identities, such as non-binary people.
- For those interested in gaming, playing in real-time with online peers and existing friends was important and seen as valuable social time. For adolescents, this time is seen as similar to 'hanging out' with peers and friends during breaks and lunchtimes at school. This is an important finding considering that adolescents with Special Educational Needs (SEN) usually experience fewer social opportunities in school compared to non-SEN peers (Blatchford et al., 2014).
- Particularly for participants with ASC, managing screen-time independently could be an issue. Accounts of becoming fixated on checking their phone, or difficulty managing time gaming (which had negative impacts on well-being) were given by some participants.

- Having communication and interaction needs might make pupils easier 'targets' for cyberbullying. This vulnerability can be related to difficulties in interpreting new media and understanding others' intentions towards them.

The findings lead to the identification of the following implications for schools, parents and educational psychologist practice:

- Technology has the potential to both alleviate and aggravate existing difficulties for adolescents with communication and interaction needs. Educational psychologists (EPs) are well placed to facilitate person-centred conversations around the risks and benefits of socialising online for individual children and young people.
- Communication technologies might be helping adolescents with communication and interaction needs meet developmental needs (such as identity exploration), but in order to navigate online threats, they might require specific support and guidance. Schools and policy makers might consider a non-universal approach to teaching e-safety in their settings.
- Social support from family members was described to be valuable in dealing with online harm effectively. This type of support allows young people to engage in learning through own experiences. Parents and families of pupils with communication and interaction needs could be supported by EPs (working collaboratively with local authorities and schools) in understanding what benefits and risks research suggests could impact their children online.
- Mentoring programmes, including peer-to-peer support, could be an effective way of working preventatively and proactively against online harms for younger

adolescents. EPs are well placed to facilitate the development of such programmes within local authorities or school settings.

- Where problematic behaviour online is being observed by parents or schools, EPs could support families and schools in planning strategies to manage the use and impact of communication technologies on children and young people. EPs are also well placed to direct families to existing guidance on how communication and interaction needs pupils can use communication technology effectively.
- For adolescents with communication and interaction needs who do not have strong offline friendships socialising effectively online might be more challenging than those who do have offline friendships. This is a need which should be considered by schools, and EPs are well placed to introduce this into the narrative around social skill interventions in schools.
- EPs need to continue working together to research and explore how communication technologies are being used and experienced by pupils with different needs within SEN. Further research into practical tools which might help assess potential risk online would be useful as well as developing a resource base for how technology can be used successfully for those with communication and interaction needs.

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Contents

1	Introduction	14
1.1	Rationale	14
1.2	Researcher's position.....	16
1.3	Defining 'communication and interaction' needs	18
1.3.1	Prevalence and impact of 'communication and interaction' needs	19
1.4	Definition of Communication Technologies	21
1.5	Research Aims.....	22
2	Literature Review	23
2.1	Overview	23
2.2	The Social Lives of children and adolescents with SEN.....	23
2.2.1	Social opportunities in school settings	24
2.2.2	Social opportunities outside of school	26
2.3	Online communication: connectivity vs connectedness	29
2.4	Theoretical perspectives on socialising online	30
2.5	Issues related to screen-time	32
2.5.1	Gaming as a social function.....	35
2.5.2	Compulsive use in relation to gaming and technology.....	37
2.6	How offline communication needs might convey online	39
2.7	Opportunities for autonomy and competency.....	42
2.8	Identity development theory and technology	45
2.8.1	Self-presentation and role of feedback	48
2.8.2	Marginalised identities	50
2.9	Vulnerability and online harms	52
2.9.1	Online risks in relation to individuals with communication needs.....	53
2.9.2	Cyberbullying.....	57
2.9.3	Seeking support in response to online harms.....	59
2.10	Summary and Research Questions	62
3	Methodology	64
3.1	Overview	64
3.2	Research Aims.....	64
3.3	Philosophical approach	65
3.4	Research Design.....	66
3.4.1	Two-stage design	66
3.5	Participants	67

3.5.1	Sampling and Recruitment	67
3.5.2	Inclusion Criteria.....	68
3.5.3	Participant Information.....	69
3.6	Data Collection.....	69
3.6.1	Descriptive Data	69
3.6.2	Semi -structured virtual interviews.....	70
3.6.3	Selecting ICT and Milieu.....	71
3.6.4	Design of data collection tools	72
3.6.4.1	Online survey (stage 1)	72
3.6.4.2	Semi-structured interviews (stage 2).....	72
3.7	Data analysis.....	74
3.7.1	Individual case analysis	75
3.7.2	Cross-case analysis	75
3.7.3	Use of NVivo during thematic analysis	79
3.8	Ethical considerations	79
3.8.1	Informed consent.....	79
3.8.2	Confidentiality and Privacy	80
3.8.3	Accessibility	80
3.8.4	Dissemination of findings.....	80
3.9	Rigour and Trustworthiness	81
3.9.1	Sensitivity to context.....	81
3.9.2	Commitment and Rigour.....	81
3.9.3	Reflexivity	82
3.10	Pandemic context and impact on methodology	84
3.11	Summary	85
4	Results	86
4.1	Overview	86
4.2	Online survey data	86
4.3	Findings from individual case analysis	88
4.3.1	Ava	88
4.3.2	Bobby	89
4.3.3	Charlie	91
4.3.4	Kel	92
4.3.5	Lola.....	93
4.3.6	Luke-Sky.....	94

4.3.7	Owen	95
4.3.8	Ryan	97
4.4	Findings from the cross-case analysis	98
4.4.1	Theme 1: Seeking social connectedness	100
4.4.1.1	Social needs being met online	101
4.4.1.2	Forming new relationships and friendships.....	102
4.4.1.3	Increased ability to control social interactions.....	103
4.4.1.4	Online social challenges.....	104
4.4.2	Theme 2: Novel opportunities for autonomy	105
4.4.2.1	Self-agency in online activities.....	106
4.4.2.2	Ability to develop new skills.....	107
4.4.2.3	Choosing apps which enable improved sense of wellbeing	107
4.4.3	Theme 3: Navigating through the reality of online harms.....	108
4.4.3.1	Knowledge of e-safety principles.....	109
4.4.3.2	Victim of negative online interactions	110
4.4.3.3	Negative impact of online activity on wellbeing.....	111
4.4.3.4	Value placed on support and guidance.....	112
4.4.3.5	Optimism on a self-learning e-journey	113
4.5	Summary of key findings	113
5	Discussion.....	116
5.1	Overview	116
5.1.1	RQ1: What are the reported experiences of adolescents with communication and interaction needs who use communication technologies to socialise?	116
5.2	Summary of themes from this research	116
5.3	Autonomy online and self-agency is valued	117
5.4	Opportunities for learning	119
5.5	Online implications of existing communication needs	121
5.5.1	Communication needs and victimisation online	123
5.6	Experiential learning and role of social support from school and home	126
5.6.1	RQ2: How do communication technologies support and facilitate the social lives of adolescents with communication and interaction needs?	130
5.7	Summary of themes from this research	130
5.8	Novel social opportunities for connectedness	130
5.9	A potentially safe space for marginalised identities.....	133
5.10	Gaming: potential and pitfalls.....	135

5.11	Strengths and limitations of this study.....	137
5.11.1	Contextual account of pandemic and impact on research process .	141
5.12	Summary of implications.....	142
5.13	Key implications for EPs	145
5.14	Future Research	150
5.15	Summary and Conclusions	152
6	References.....	154
7	Appendices.....	179
7.1	Appendix A: Literature Search Strategy	179
7.2	Appendix B: Participant information	180
7.3	Appendix C: All About Me	181
7.4	Appendix D: Example of online Survey	182
7.5	Appendix E: Example Interview schedule with prompts	184
7.6	Appendix F: Transcript excerpt (Bobby WhatsApp interview)	187
7.7	Appendix G: Transcript excerpt (Ryan Video Call interview).....	188
7.8	Appendix H: Example of coded transcript extract using NVivo.....	190
7.9	Appendix I: Information sheet and consent form for parents.....	191
7.10	Appendix J: Consent form for participants	193
7.11	Appendix K: Examples of individual thematic analysis maps.....	194
7.12	Appendix L: Example of initial coding and peer-review coding	195
7.13	Appendix M: Results analysis process.....	197

Glossary of terms

Content: recently coined with the rise of social media and generally means anything that someone has posted or shared with others. The term 'content creator' could be applied to anyone who posts to social media platforms.

DM: stands for 'direct message'. The phrase refers to messages sent privately on various social media channels.

Emoji: a small digital image or icon used to express an idea or emotion (Google dictionary, 22/10/20).

Facebook: Facebook is an American online social media and social networking service owned by Facebook, Inc (Google dictionary, 22/10/20)

Filters: an overlay that can be used when taking a photo of oneself. Filters are regularly updated on Snapchat and Facebook and are also programmed into camera settings on some Android phones.

Likes: this feature allows users to express their like of a particular post on social media platforms like Instagram and Facebook, by either giving it a 'thumbs up' (Facebook) or clicking the heart (on Instagram).

Live Streak / Stream: a live transmission of an event over the internet using either audio or video coverage.

Meme: an image, video, piece of text, etc., typically humorous in nature, that is copied and spread rapidly by internet users, often with slight variations (Google dictionary, 22/10/20).

New Media: means of mass communication using digital technologies such as the internet (Oxford language, 09/02/21).

Post: a post is an image, comment or video uploaded by the user to a social media platform.

Share: sharing is an action in which a user can choose to make a certain post from another user available to people they may follow, or their own followers.

Stories (Instagram/Snapchat): stories allow users to post photos and videos for their followers to see that last for 24 hours on the platform before vanishing.

WhatsApp: WhatsApp Messenger, or simply WhatsApp, is an American centralized instant messaging service which allows users to send text messages and voice messages, make voice and video calls, and share images, documents, user locations, and other content (Google dictionary, 22/10/20).

1 Introduction

1.1 Rationale

The social experiences of pupils with SEN are different to their non-SEN peers (Blatchford, 2014; Meyer, 2001). Even with the emphasis on an inclusive and quality education for all CYP (UNESCO, 2017), research studies have consistently suggested that pupils with SEN experience fewer opportunities for social engagement and interactions in school compared to their peers in mainstream settings (Blatchford, 2014; Meyer, 2001). Furthermore, pupils with SEN have shown to have fewer opportunities for social interaction outside of school (Higley, 2017), indicating a possible double deficit.

Over the last few decades, a huge change in how CYP socialise with one another has occurred due to revolutions in digital communication technologies. In particular, adolescents' primary use of smart devices is to connect with one another and they spend more time engaging in social activity online than any other age group (Boyd, 2014; Ofcom, 2020a). Illustrating this, the percentage of social media profiles doubled between ages 10 to 12 (21% to 43%), with another sharp increase between ages 12 and 13 (50% to 74%) in the U.K. (Ofcom, 2016). Adolescents report that communication technologies, such as social media, enable them to manage, reconstruct and strengthen existing relationships (Reich et al., 2012; Wang & Edwards, 2016). As friendships are deemed essential for psychosocial development during adolescence (Ojanen et al., 2010) and are believed to contribute to the development of interpersonal skills (Valkenburg & Peter, 2009), a connected society might present unique social opportunities and benefits for those who experience limited social opportunities offline.

Starting with websites solely created to encourage social networking (such as Myspace in 2004 followed by Facebook in 2006), 'new media' now encourages mass communication between users (Boyd & Ellison, 2008) and this could be in the form of creating, consuming, or sharing multi-media content (Romero et al., 2011). With fast and constant access to the internet and social information, CYP have become publishers as well as consumers of 'content' and now spend several hours online every day (Awan & Gauntlett, 2013; Ofcom, 2020a). The easy access to a range of media and international communities has brought a range of opportunities for marginalised and isolated identities within society and for those with particular fixed interests.

However, research into how technology facilitated social opportunities might extend to CYP with SEN is currently lacking. Existing research has approached communication technology use by SEN groups from a vulnerability, risk, and safety perspective (e.g., Katz & El Asam, 2019) which, whilst important, can present a potentially skewed picture of online experiences from the viewpoint of CYP themselves. Research with typically developed CYP finds that (despite the risk to online harms) they value how technology can offer positive opportunities, enjoyment, support, learning, and friendships (Best et al., 2014; Children's Commissioner, 2018). If these opportunities are denied to CYP because they are pre-empted to be unsafe online it could represent a further deficit in accessing social opportunities (El Asam & Katz, 2018).

Indeed, initial studies with SEN groups suggest CYP with communication and interaction needs, such as those with ASC, might be a subgroup who appear to be able to socially compensate for their unique communication style through online interaction (Katz & El Asam, 2019; van Schalkwyk et al., 2017). One reason for this could be because communication technologies provide a more predictable social

environment with limitations to social cues (Burke et al., 2010). For some individuals, this might be preferable to offline interactions which can be unpredictable or, in some cases, feel overwhelming. The affinity with which adolescents with ASC are perceived to use technology (such as for gaming purposes) has also drawn some interest from researchers (MacMullin, 2016).

Research concerning typically developed CYP suggest they consume media because they feel that it meets their various needs, some of which are not being met in offline environments. Most importantly, research which has engaged with the views and experiences of CYP themselves indicate that the perceived benefits afforded to them are very important to them (Children's Commissioner, 2018). Furthermore, researchers have suggested that technology use is not always passive and that CYP often choose the media and technology that meet their specific needs, in the process of informed consumption (Zilka, 2018). In line with SEN and Disability code of practice (DfE & DoH, 2014), the EP remit is to capture the views and aspirations of CYP (Roffey, 2015). So far, most studies which have considered communication technologies and SEN groups have done so from a positivist approach, using quantitative measures and from parent or teacher's perspective (e.g., Kuo et al., 2014; Katz & El Asam, 2019). Whilst useful in highlighting the potential risks associated with technology use for CYP with SEN, these studies do not consider the experiences of pupils themselves and this means there is an imbalance in suggestions and implications from these studies.

1.2 **Researcher's position**

In reality, relatively little is known about the possible impact of technology use on CYP with various types of SEN. However, it is the role and responsibilities of EPs to explore all issues which are important to CYP and this includes exploring their use of

technology and how it might be impacting various aspects of development. However, despite issues and risks associated with technology being present in issues related to EPs, there is a relatively limited resource base for EPs to draw on which can guide their work and help bridge the understanding of child development theories with current technology use patterns among CYP. In my practice as a trainee educational psychologist (and during previous experience of teaching in mainstream settings) I have been involved in cases where CYP with communication needs offline also experienced social challenges online. I noticed that teachers and parents often felt the only way to intervene in these situations was limit the young person access to technology, so as to limit exposure to negative interactions online or being 'left out' of social groups online. On these occasions I was sometimes able to use consultation to develop shared understanding between CYP and adults who support them about what needs technology might be meeting for individual CYP, as well as signposting stakeholders to useful resources. I also observed that further research would be needed to better inform EP understanding of what technology means to CYP today, as well as what challenges might be faced online by those with existing needs. As well as this, if EPs and educators understand individual differences in the use and potential effects of technology, they should be better able to design interventions that target different subgroups of adolescents going forward (Valkenburg & Peter, 2011).

Furthermore, in March 2020, the UK was placed in lockdown in an effort to help slow the spread of Coronavirus (COVID-19). The lockdown had disrupted the lives and daily routines of everyone; the impact is likely to have had a particular impact on children and young people with the closure of schools and disruption to social relationships. This research took place at the start of the covid-19 pandemic and this study is

considered timely because of the role technology played during the pandemic in keeping society connected and informed.

The pandemic context directly impacted the experiences of young people in England of using communication technologies. CYP were no longer able to take part in regular activities which would usually be linked to positive well-being and healthy lifestyles. Where CYP might have been encouraged to spend time away from technology, the pandemic meant that technology became one of the only tools we had to stay connected to others. This research study therefore endeavours to take into account the impact the pandemic might have had on the research process.

1.3 **Defining ‘communication and interaction’ needs**

The special educational needs and disability code (SEND) of practice recognises a child as having special educational needs if they have either a significantly greater difficulty accessing learning compared to the majority of children their age, or they have a disability which prevents them from making use of the educational facilities that are typically provided to them (DfE & DoH, 2014). The guidance states that children’s special educational needs should be considered under four broad areas:

- communication and interaction,
- cognition and learning,
- social, emotional and mental health and
- sensory and/or physical needs.

Although there are a range of diagnostic difficulties and disabilities which can result in learners experiencing greater challenges in accessing learning, by the SEND code of practice definition, a child should be considered to have SEN independent of the reason for the difficulties they experience (Hodkinson, 2009). The purpose of

identification is to work out what action the school needs to take, not to fit a pupil into a category. In practice, individual children or young people often have needs that cut across all these areas (DfE & DoH, 2014, p. 97).

Within the broad area of 'communication and interaction' needs are CYP with SLCN or ASC. Children with SLCN have difficulty communicating with others and this might be because of difficulty saying what they want to (expressive language needs), understanding (receptive language needs) what is being said to them or they do not understand or use social rules of communication. As well as SLCN impacting on academic performance, there is acknowledgement within research of the risk of negative social outcomes for a significant proportion of children with SLCN (Bakopoulou & Dockrell, 2016). For children with ASC, challenges with social interaction are present because of difficulties with language, communication and imagination (DfE & DoH, 2014) which can impact on how they relate to others.

1.3.1 Prevalence and impact of 'communication and interaction' needs

The profile for every child is different and needs can change and adapt over time. SEN exists on a continuum from CYP whose needs are of low severity and can be met within a typical, inclusive education setting through 'SEN support', to those who have more severe or complex needs which require a higher degree of additional provision in either a mainstream or specialist setting. CYP with the most severe, or complex needs are likely to require further multi-agency assessment to ascertain what type of holistic support they might need. This includes planning for adulthood for CYP aged between 13 years to 25 years. A multi-agency assessment of this type might result in an Education, Health and Care Plan (EHCP) being issued to the child or young person. An EHCP is a statutory document recognising and protecting the child's educational needs.

In regard to prevalence of communication and interaction needs in the UK, the government statistics publication of data on pupils with SEN indicate that for pupils with an EHCP the first most common need is ASC (equated to 30% of all pupils with an EHCP in the UK; DfE, 2020). The second most common type of need is SLCN (equated to 15% of all pupils with an EHCP in the UK; DfE, 2020). Among pupils with 'SEN support' only (and not an EHCP), the most common type of need is SLCN (237,000 pupils equating 24% of all pupils receiving SEN support in the UK). Comparatively, number of pupils receiving SEN support to support ASC needs was 67,867 in 2019/20.

It is well known that CYP with ASC experience difficulties with social communication and perception (Laugeson & Ellingsen, 2014; Vermeulen, 2019). Related to their language difficulties, studies have demonstrated that CYP with SLCN, like CYP with ASC, often experience difficulties with social perspective taking and have underdeveloped social problem-solving skills (Loukusa et al., 2014). Social perception difficulties may have an effect when there is a need to understand others' intentions and motives in social situations. Social perception is related to 'theory of mind' which is the capacity to understand other people and their behaviour by ascribing mental and emotional states to them (Loukusa et al., 2014).

In their study, Loukusa et al. (2014) compared performance of children with SLCN and ASC in different social perception tasks. Findings from the study suggested the connection between language and social perception was stronger for children with SLCN compared to children with ASC but that both groups show difficulties in tasks measuring verbal theory of mind. Really little is known about how technology would mediate the needs demonstrated in the study by Loukusa et al. (2014) for CYP with communication and interaction needs. Considering technology impacts on social cues

and other nuances related to communication and understanding others' intent online, further research into how offline needs convey online is needed. This has become even more evident considering recent national lockdown context where all CYP, including those with SEN, were expected to take part in virtual learning via online classrooms.

As both SLCN and ASC impact on social communication (though in different ways), this study included participants with a diagnosis of ASC or SLCN who were identified as having 'communication and interaction needs' that impacted their communication skills and abilities.

1.4 **Definition of Communication Technologies**

This definition of 'communication technologies' within this study, include all technological resources which make it possible for people to communicate. Types of communication technology include: email, texting, instant messaging, social networking, tweeting, blogging and video conferencing.

The study bases its definitions on those implied throughout the Children's Commissioner Report (2018). As such, "communication technologies" is defined as:

the broad range of technologies, applications and websites through which children and young people in England are known to communicate, either through creating and sharing media content or by using sites or apps which are intended for, and encourage, communication. This includes longer standing forms of technology (e.g., phoning somebody, sending a text or email).

Whilst the offline-online dichotomy may inadequately describe the hybrid experience of many young people, it seems to be a useful way to distinguish the two different communication channels without implying that the online one is not real (Jurgenson,

2012). Thus, in this study, 'offline' communication is used to refer to face-to-face contact and 'online' to describe technology mediated communication.

1.5 **Research Aims**

Research among particular vulnerable groups of children and their internet use has been less extensively researched than with typically developed CYP (El Asam & Katz, 2018). The issue with existing research is that by focusing on the overall or the general impact of social media use on psychosocial development of adolescents, any individual differences in relation to effects of online activity are not considered (Greenhow & Burton, 2011; Steinfield et al., 2008). Further research into the views and experiences of young people with communication and interaction needs will help inform the types of support that are best suited to maximise potential and guide support to minimise risk. Consequently, this research explores:

- the role of communication technologies in the social lives of adolescents with communication and interaction needs
- the perceived benefits of using communication technologies to socialise and how these relate to the motivation to use technology
- the value prescribed to experiences when using communication technologies for adolescents with communication and interaction needs

2 Literature Review

2.1 Overview

This chapter examines the existing literature concerning technology use and the potential benefits and drawbacks of use for adolescents with communication and interaction needs. It begins by exploring the role of peer acceptance and friendships in child development, and what these mean for adolescents with SEN in general. Existing social opportunities for pupils with SEN are discussed, both in and outside of school. The review then progresses to discussing theoretical perspectives on the risks and benefits of socialising online and how this might apply to adolescents with communication and interaction needs. This is followed by a more specific focus on the social processes online which might be occurring for those with communication and interaction needs, including a focus on Self-Determination theory in relation to the motivation for online participation. Lastly the chapter considers the most pertinent online risks and harms in relation to adolescents with communication and interaction needs. For literature search processes, see Appendix A.

2.2 The Social Lives of children and adolescents with SEN

Friendships are deemed essential for psychosocial development in adolescences and are believed to contribute to the development of interpersonal skills (Valkenburg & Peter, 2009). Time spent with peers and friends becomes more important during adolescence and this forms part of a process of moving away from parents and family for social and emotional support, leading to a more independent life (Berndt & Keefe, 1995). Close friendships provide adolescents with an important emotional resource, which can buffer some of life's stressors, such as starting a new school (Ladd, 1999). Whereas there can be a tendency to consider being or not being a friend as dichotomous, the reality is that experiences are continuous and overlapping (Hartup, 1996).

2.2.1 Social opportunities in school settings

Over the last few decades, the impact of an inclusive education system (DfES, 2001; DoE, 2018) for CYP has been well researched with a key focus being on the opportunities available to pupils with SEN within an inclusive framework. Despite this, research in both specialist and mainstream education settings has found that the social experiences of pupils with SEN are different compared to their non-SEN peers.

Meyer et al. (1998) used a mixed methods participatory research approach to explore the relationships of adolescents, both with and without SEN, from five schools in the USA. The study explored the experiences of eleven students who were taught in mainstream school settings and had severe learning difficulties, pervasive and multiple disabilities, ASC or Downs Syndrome. Meyer et al. (1998) proposed six types of relationships, which were termed “frames of friendship”: (a) best friend, (b) regular friend, (c) just another child, (d) I’ll help, (e) inclusion child, and (f) ghost/guest. These “frames” were created based on the primary roles that participant partners in the relationship assumed over the course of the study. Meyer et al. (1998) describe that though a child may experience each of these frames to differing degree, the value of regular friends, and the need for one or more best friends in a child’s life was deemed essential.

Findings from the by Meyer et al. (1998) suggested that the social experiences of those with SEN were most frequently characterised within frames such as ‘Inclusion Kid/Student’ (a child who appears included and is not treated differently in the class but who does not have close friendships with other children). Green and Schleien (1991) refer to this phenomenon as ‘facades of friendship’, whereby a child may appear to be included within the classroom, however in reality their relationships do not possess all of the qualities which would be expected of a close friendship. Such

findings demonstrate that whilst inclusive education policies might predict better relationships for children in inclusive school settings, a number of studies have suggested that children with SEN, including those with communication and interaction needs, may still face difficulties developing relationships with other children (e.g., Avramidis, 2013; Green & Schleien, 1991; Meyer et al., 1998). Despite attending inclusive educational settings, further intervention is needed to ensure CYP with communication and interaction needs have improved social experiences in school and are supported to develop meaningful relationships with their peers.

Furthermore, pupils with SEN have been found to have fewer interactions with teachers in school than their non-SEN peers. Pinto et al. (2019) explored differences between SEN and non-SEN groups in relation to levels of social contact in class and teacher ratings of behaviour. Three hundred and seventy-five 9 to 11-year-old children were recruited from 4 mainstream primary schools in the south of England. Of the three hundred and seventy-five, fifty-nine pupils had been identified as 'having' a SEN and 17 of them had a 'statement' of SEN (*now known as EHCP*). Compared to pupils without SEN, pupils with a statement of SEN had lower levels of peer acceptance, fewer reciprocated friendships, and were less integrated into peer groups. Within mainstream settings, the deployment of support staff being directed towards working with SEN pupils has been suggested to be a barrier to potential meaningful contact with their peers. The Making a Statement project (Blatchford et al., 2012; Blatchford, 2014) suggests pupils in mainstream settings with SEN statements spent over a quarter of their time away from the mainstream class (including the teacher and their peers) compared to average attaining pupils. This finding was alongside the overarching finding from the Deployment and Impact of Support Staff project that found the more one-to-one support pupils received from support staff, the less

progress they made (Blatchford et al., 2012; Blatchford, 2014). One of the reasons suggested for this was because pupils spent less time actively interacting with them and more time passively receiving support. Researchers suggest greater opportunity for meaningful social contact between teachers and pupils with SEN may improve social involvement of those pupils educated in mainstream schools as well as enhance academic outcomes for those pupils (Pinto et al., 2019).

Blatchford et al. (2015) defined the development of social competence as '*[the] ability to coordinate affect, cognition, and behaviour in achieving personal social goals and accessing resources in their specific developmental niche*' (Blatchford et al., 2015, p. 20). Importantly, social competence does not develop in a social vacuum, but instead children and adolescents learn to skilfully interact with peers and form relationships by having the opportunities to do so. Just as their typically developed peers, children and adolescents with communication and interaction needs have a basic need for relatedness with others and are likely to feel lonely if their perceived quality and quantity of desired relationships do not match up to reality (Cassidy & Asher, 1992). As described in the study by Meyer et al. (1998) difficulties can arise when one's social experiences all fall within certain 'frames' that exclude positive social relationships and friendships with peers. Further and ongoing developments are needed to ensure CYP with communication and interaction needs are having enough opportunities to develop social competence in school settings.

2.2.2 Social opportunities outside of school

Given that children and adolescents with SEN may have different social experiences to those without SEN during school time, it is also important to consider what their experiences may be outside of school. Doctoral research by Higley (2017) involved a mixed methods approach to explore opportunities that children and adolescents with

SEN had in order to access organised and informal social activities outside of school. Although children were found to be participating in at least one organised activity each week, 41.5% of parents included in the thesis research study reported their child did not have at least one good friend. Interview data from the study showed that parents raised issues related to both 'within child' factors and environmental factors impacting upon their child's social participation outside of school. Within child factors would include difficulties with language development or communication and environmental factors might be accessibility issues to an activity or space. The parent survey component of Higley's study (2017) found 77.6 % of parents said that their child 'sees other children rarely' or 'not at all' outside of school. This count considered responses to all informal settings, including 'own home', 'other child's home' and 'in community settings. These responses were cross-tabulated by child or adolescent gender irrespective of whether or not they had a statement of SEN or EHCP, the type of school the child attends, type of SEN, and Key Stage.

Aside from Higley's study (2017), research into the social opportunities outside of school afforded to children and adolescents with SEN continues to be limited and focuses on a sample consisting of various types SEN and disabilities. This means the findings do not generalise to particular types of SEN (such as to CYP with communication and interaction needs) and possible nuances between needs and experiences might be being missed. The use of mixed methods in Higley's research was a strength as it allowed quantitative data to be supported by the qualitative views of parent participants however a limitation of the study was that it focused on parent perspectives to hypothesise implications for adolescents with SEN rather than engage with the views of adolescents.

Within his study, Higley acknowledged that communication technologies such as engaging with social media is an important social activity undertaken by children and adolescents. Although Higley's study (2017) did not include the possible social opportunities which might be afforded online to young people with SEN, he suggested that future research should consider the use of social media as a virtual space for social opportunities due to how much time CYP spend online engaging in social activities (Ofcom, 2020 (a)). In particular, adolescents report that social media enables them to manage, reconstruct, and strengthen existing relationships (Reich et al., 2012; Wang & Edwards, 2016). This is unsurprising given the importance of gaining and maintaining relationships during adolescence (Erikson, 1968). Online interactions could offer a completely different social context and world for children and adolescents with various types of SEN. They offer opportunities for friendship, and relationships with others outside of the family and also the opportunity to develop social skills (Reich et al., 2012).

However, for CYP with communication and interaction needs who might struggle with social communication and forming friendships, the development of social media platforms and the feature of being able to become 'friends' with someone online adds another dimension to social relationships. Pupils with ASC or SLCN experience particular challenges with language and communication (Loukusa et al., 2014) and communication technology could be experienced very differently by them because of this. Previous prominent studies exploring social interactions of CYP with SEN have included and considered all forms of SEN, including experiences of pupils with communication and interaction needs associated with ASC or SLCN (e.g., Blatchford et al., 2015; Meyer, 2001) but within these studies, a differentiation was not made between types of SEN and potential impact of this on interactions. Although findings

from the studies are relevant to pupils with SEN in general, much further research is needed to better understand how adolescents with communication and interaction needs are making sense of online social opportunities.

2.3 **Online communication: connectivity vs connectedness**

Overall, adolescents' primary use of smart devices is to connect and share content with one another, and they spend more time engaging in social activity online than any other age group (Boyd, 2014; Livingstone et al., 2017). Through social media, the number of relationships in which individuals can participate, the frequency of contact, and the intensity, are increasing with young people relying more on social media for inclusion in their existing peer groups. However, some have described this as more of a "public display of their connection" (Boyd, 2008, p.213). It is argued that the move towards "platformed" sociality has created a shift from participatory connectedness to a culture of connectivity; a mere state of being connected (Dijck, 2013). For those socialising online, research indicates that whilst use of social media and networking sites can maintain and improve quality of existing friendships, increased time spent on social media yields diminishing returns in terms of friendship quality (Antheunis et al., 2016). The relationships between time spent online and friendships is therefore not a simple one. Outcome and potential impact of time spent using technology is more dependent than on type of activity engaged with online (e.g., social or passive) rather than time alone being the key factor (Shankleman, 2020). Considering the limited social opportunities with children and adolescents with communication and interaction needs, both inside and outside of school, their experiences of socialising online are even more important from a 'connectedness or connectivity' perspective. This is also even more important when considering individual adolescents with communication

and interaction needs and how technology might mediate communication difficulties but also present different challenges too.

2.4 **Theoretical perspectives on socialising online**

Research on the effects of online communication on friendship formation and the quality of relationships online has mostly revolved around two hypotheses: displacement and stimulation. Both are concerned with the impact socialising online might have on well-being in comparison to offline social interactions.

The displacement hypotheses predicts that online communication reduces adolescents' well-being because it displaces time spent with existing friends, thereby reducing the quality of these friendships. Since the widespread use of communication technologies (such as smartphones), the displacement hypothesis continues to dominate conversations and newspaper publications around adolescent's use of screen time. The hypothesis suggests that online communication takes time away from offline communication which then weakens existing relationships and encourages intermittent online social interactions at the expense of strong offline ones (Cummings et al., 2002; Kraut et al., 1998).

In contrast to the displacement hypothesis, the 'stimulation hypothesis' states that online communication stimulates well-being via its positive effect on time spent with existing offline friends and the quality of these friendships (Gross, 2004; Valkenburg & Peter, 2007). The hypothesis proposes that online communication builds and augments existing social ties, thus helping to strengthen relationships. The stimulation hypothesis links with the 'increase hypothesis' (Lee, 2009) that suggests time spent communicating online supplements offline communication, and online engagement bridges new offline experiences such as planning social events together (Ellison et al., 2007).

Recent understanding is that both competing hypotheses may be applicable in that that how online socialisation associates with friendship quality is actually dependent on the nature of the platforms being used and aspects of the users themselves (Valkenburg & Peter, 2007) rather than just time spent online. While online interactions have been synonymised as being less intimate than offline interactions in experimental designs (Cummings et al., 2002), there is a suggestion that in particular contexts, online communication can strengthen existing offline relationships (Desjarlais & Willoughby, 2010; Valkenburg & Peter, 2009). For example, Blais et al. (2008) found that direct social media interactions with offline friends were better for relationships that interacting on less social platforms. Similarly, investigating the displacement and stimulation hypothesis, Valkenburg and Peter (2007) found that alongside support for the stimulation hypothesis, a moderating effect of different types of communication technology on adolescents' well-being existed.

In their study, Valkenburg and Peter (2007) used an online survey with Dutch adolescents aged 10 to 17 years. The survey consisted of questions related to five measures of online communication patterns and well-being. Responses from the 1210 participants were explored using mediation analyses. Findings suggested that instant messaging, which was mostly used to communicate with existing friends, positively predicted well-being via the mediating variables of 1) time spent with existing friends and 2) the quality of these friendships. The authors of the study suggest these effects may be attributed to the controllability of online communication and its reduced social cues (e.g., not being able to see someone's expression if communication via text). Although the study by Valkenburg and Peter (2007) used a sample of typically developed adolescents (with no identified SEN) these findings have implications for

adolescents with communication and interaction needs who might already struggle with a lack of control in offline social situations and with reading social cues.

Also, for some people the activities, displaced by screen time are not necessarily positive or more desirable (Katz & El Asam, 2019). In particular, where adolescents with communication and interaction needs appear to have fewer offline social interactions than their peers, it is possible that the displacement hypothesis would be less applicable to this group (van Schalkwyk, 2017). Existing research has suggested that future studies should focus on particular groups in society (such as individuals with SEN) to consider new opportunities for those who are isolated, stigmatised or restricted in face-to-face interactions (Valkenburg & Peter, 2007; van Schalkwyk, 2017).

2.5 Issues related to screen-time

Related to the displacement hypothesis, concern remains amongst parents and educators about the impact prolonged technology use may have on young people, with much debate focusing on the impact of screen time in general (Best et al., 2014; Frith, 2017). Understanding the impact of technology use (such as social media) on adolescents' well-being has become a priority due to a simultaneous increase in mental health problems (Shankleman, 2020). A systematic review by Keles et al. (2020) into the correlation between social media and depression, anxiety and psychological distress in adolescents found 'time spent' was a correlating factor (with increased time online correlating with each variable). However, Keles et al. (2020) also reported that most authors of the 13 studies included in the review noted that the observed relationship is too complex for straightforward statements to be made about mental health problems and technology use. Despite the growth in research studies which explore impact of social media on the mental health and well-being of

adolescents, it continues to be an area which requires further longitudinal research which might better explain observed correlations between screen-time, social media and mental health (Shankleman, 2020).

Nonetheless, problematic behaviours related to internet use are often described in psychiatric terminology, such as 'addiction'. In particular, studies have highlighted addictive characteristics associated with internet use including description of withdrawal symptoms when internet use is impossible and the inability of CYP to self-manage time spent online (Meerkerk et al., 2009). Within this general concern around the impact of technology on CYP, parents of individuals with ASC are significantly more likely to report that electronics use is currently having an observable negative impact on their child (MacMullin et al., 2016). This is similar to data from teachers in English special schools who suggest that children with various types of SEN were often obsessive and compulsive, and viewed as 'addicted' or obsessed with the internet (Del-Manso et al., 2011). Teachers reported pupils have 'melt downs' if they could not go on the internet (Del-Manso et al., 2011).

However, there is also the suggestion that some activity in younger people could be misconstrued as abnormal by adults working with them. For example, adolescents who frequently post images of themselves ('selfies') may appear narcissistic, but such behaviour has emerged as a social norm in younger social networks (McCrae, 2018). This difference in viewpoints, which may be due to generational divides, can only be addressed by involving adolescents in research concerning their age group. This would help researchers better understand what adolescents are seeking from their online activity rather than focusing solely on negative outcomes of any given activity.

In relation to screen time and SEN, the link between ASC and excessive gaming has been particularly focused on. A US based study by Mazurek and Wenstrup (2013) explored the nature of television, video game, and social media use in children and adolescents aged 8–18 years. The study used parent reported data on 202 adolescents with ASC compared to their 179 typically developed siblings. Measures included parent reported estimates of time spent on screen-based activities compared to other leisure activities, video game use patterns and a test of problematic video game use. Findings from the descriptive statistics suggest children and adolescents with ASC are more likely to report having difficulty disengaging from playing video games, feeling upset when not being able to play, getting angry when interrupted during games, and playing longer than intended compared to their typically developing siblings (Mazurek & Wenstrup, 2013). The study relates these challenges to difficulties with social and emotional regulation skills which all adolescents develop over time with support, but which adolescents with ASC might need further intervention to develop and foster.

The study by Mazurek and Wenstrup (2013) is important as very little research focuses on how the needs of adolescents with communication and interaction needs might be different to typically developed peers. However, the research study relied on parent perspectives of screen-time use and as the sample of participant parents were recruited with the assistance of a state-based autism support network, it's possible that these parents in particular were already concerned about their child or adolescents. This is not to say parents who are not part of a network are not also concerned about their children but rather than the chances of the participant parents perhaps struggling with issues relating to ASC might have been higher than if participants were recruited using other sampling methods.

2.5.1 Gaming as a social function

Online gaming now combines the issues surrounding both video game use and social internet use (Griffiths, 2014) and this has implications for adolescents with ASC who may experience social communication challenges but are also keen gamers. It's possible that gaming could be an opportunity for semi-structured social interaction for those who might have limited social opportunities offline. There is modest evidence that videogame play does in fact serve a social function for individuals with ASC and could be a gateway to interaction and communication with peers with typical development (Winter-Messiers, 2007).

Previous research, though minimal, has determined part of the appeal of videogames for individuals with ASC is the challenge associated with the game play itself. Children with ASC face many challenges in their everyday lives and in school contexts; therefore, it is possible that the challenges presented in videogames may be more manageable, enjoyable, or rewarding than other tasks they are presented with throughout the day (Durkin et al., 2013). This would relate to a form of escapism from offline problems. Individuals with ASC can become expert videogame players which could also result in higher levels of social interaction and self-esteem (Durkin et al., 2013). More recently, Finke et al. (2018) investigated the perceptions of individuals with ASC who play videogames as their primary leisure activity. This research is unique as it is one of few to consider potential for technology use as useful context for teaching new communication, social, and language by speech and language therapists. It's also one of very few studies to consider the experience of socialising online with a sample of young people with SLCN. The study used qualitative interviews, which were conducted through a positive lens, to investigate the experiences of ten 18–24-year-olds with a diagnosis of ASC. Information was gathered

about the role of videogames in the lives of participants and the perceived benefits of playing videogames to explore how speech and language professionals could use social gaming as a context for intervention and social communication development. Though it was a small-scale study, a key strength is that findings focused on the views and own experiences of young people themselves. Participant motivation for use was central to the research design and this is important, as speech and language professionals could use findings to have a developed understanding of what drives behaviour in the young people they work with. Findings from the study suggest participants perceived playing videogames to have a positive impact on their lives and their development. The described motivations for playing videogames are similar to those reported by typically developing populations. These included spending time with others and engaging in a leisure activity with others.

Finke et al. (2018) suggest their findings mean speech- and language professionals should consider how videogame play may be a useful context for teaching new communication, social, and language skills. This study has implications for EPs who might be interested in finding novel ways to access the views of children and adolescents as well as EPs who are also interested in designing social skill interventions. The title of the study uses a quote from a research participant and is important for EPs working with children with communication needs to consider: *“To be quite honest, if it wasn’t for video games, I wouldn’t have a social life at all”* (Finke et al., 2018, p. 672).

Motivation is the process that initiates, guides, and maintains goal-oriented behaviors in people (Vallerand & Ratelle, 2002). Within research studies, motivation for communication technology use has been identified as an important indicator of implications of use (Woods & Scott, 2016). Self-determination theory is valuable for

EPs to refer to when considering motivation for technology use by adolescents with communication and interaction needs as it has successfully explained the intrinsic motivation that individuals exhibit regarding well-being (Reis et al., 2000) through the 'need satisfaction' process (Deci & Ryan, 2000). This process has recently been extended in digital games (Peng et al., 2012) and social media (Reinecke et al., 2014).

2.5.2 Compulsive use in relation to gaming and technology

In addition to potential social benefits of gaming, associated risks have also been explored. Since 2018, according to the ICD-11¹ (WHO, 2019), people with 'gaming disorder' have trouble controlling the amount of time that they spend playing digital or video games. A diagnosis would mean they prioritize gaming over other activities and experience negative effects from their gaming behaviors. In research studies, this potential for 'excessive use' has been explored particularly in relation to participants with ASC.

Before the development of excessive gaming as a disorder, Shane Simpson et al. (2016) explored the possible determinants of compulsive internet use (CIU) and investigated whether offline social difficulties, such as those associated with ASC, could clarify whether individuals compensate for offline difficulties through online interactions. The researchers used an online survey to measure CIU alongside data on social symptoms of ASC (such as restricted interests and repetitive behaviours) self-esteem, and Facebook activity. The survey was completed by 1597 undergraduates from a single university in the US. A relationship between CIU and autistic traits was attributable to non-social characteristics (such as restricted interests

¹ International Classification of Diseases 11th Revision

and repetitive behaviours) and a relationship was identified between RIRB and information-seeking behaviours.

These findings suggest that non-social characteristics of, such as their degree of restricted focused interests and their tendency to engage in repetitive behaviors may contribute more strongly to compulsive technology use than social characteristics. The findings are similar to those from one of the first studies to examine internet addiction by Shotton (1991) in which people who reported being dependent on the internet were interviewed. It was found that they preferred “*the safe and predictable world of the inanimate*” (p. 219) to the confusing world of people. Shotton (1991) emphasised that compulsive use of the internet allowed people to make sense of their worlds, to investigate things they cared deeply about, and often to turn hobbies into careers. The current findings align with Shotton’s description of individuals who exhibited dependence on the internet by emphasizing the contributions of focused interests in particular to compulsive internet use.

Aarseth et al. (2017) raised concerns about the classification of gaming disorders suggesting panic around gaming habits and people getting an inaccurate diagnosis, especially children and adolescents. They questioned the quality of the research base for gaming disorder and stress the difficulties of making a diagnosis and also took issue with using substance abuse and gambling disorders to formulate the criteria for gaming disorder. The research and the debate are ongoing and some argue that gaming could be a symptom of an underlying problems, such as depression or anxiety rather than a disorder or addiction itself (Aarseth et al., 2017). Additionally, studies in this area have mostly focused on young adults rather than children or adolescents. Research which does consider younger age groups has mostly relied on the views and reports of parents or caregivers as to the amount of internet use and the perceived

effects for this group (MacMullin et al., 2016; Staksrud, 2013) rather than research designs which encourage the voice of the adolescents themselves.

2.6 **How offline communication needs might convey online**

Difficulties with interpreting language online and 'cyber-etiquette' have been described as key barriers to having a positive experience of social media and other communication technologies (Caton & Chapman, 2016). One example of this is the misinterpretation of the word 'friend' in the sense it is used on Facebook (Holmes & O'Loughlin, 2014). As difficulties with interpreting social communication is a key feature of ASC a small body of research exists which explores online social interactions for this group.

A large number of studies have suggested children and adolescents with ASC are less interested in using technology for social purposes than their non-ASC peers or siblings (Mazurek & Wenstrup, 2013). As an example, a study by Durkin et al. (2013) on a sample of 35 adolescents with ASC reported that only 60% used a mobile phone, compared to 94% of a matched typically developing sample. The conclusion was that compared to the comparison group, individuals with ASC were less likely to value calling peers and were more likely to use mobile phones for games (rather than to communicate with others) than their peers. Researchers relate this difference to difficulty with social interaction and having fewer friendships compared to individuals without ASC (Durkin et al., 2013; Mazurek et al., 2012; Mazurek & Wenstrup, 2013).

However, despite the possibility that some adolescents with ASC might prefer non-social technology use, research studies which have engaged directly with the views of adolescents themselves indicate suggest social connectivity is a key reason for technology use. Mandy and Hull (as reported by Morris, 2019) undertook participatory research to better understand how autistic adolescents use social media and what

educators could do to support healthy digital social lives for this group. The project consisted of interviewing autistic adolescents and their parents and investigated how benefits can be maximised while risks minimised. A strength of this project was its balanced approach to understanding how adolescents use technology, and the value that was placed on the views of the young people themselves and their experiences.

Two key strands emerged in the project's findings: control and community. Meeting people's expectation of responding quickly on social media was identified as a major difficulty for autistic teens (so a lack of control and pressure was experienced), however control in choosing when and how to engage with others and interacting on their own terms was seen as beneficial. Similarly, social media was viewed as affording an opportunity to connect with others in a unique way and to find communities of people with shared interests. This might be a particular benefit for people with ASC who might have unique interests that may be considered unusual by peers at school. The study's main findings were used to create 'a rough guide to social media use for teens with autism' and a separate guide for parents of teens with autism. Although this project is not published (and therefore not peer-reviewed) the creation of a 'rough guide' is a real strength as it was able to offer immediate support and guidance to the community it engaged with.

Another study by van Schalkwyk et al. (2017) explored the link between Facebook use, anxiety, and friendship quality in 44 adolescents with ASC and 56 comparison controls. The study was based on the premise that adolescents with ASC are well-suited to capitalise on the unique features of social media, which might require less decoding of complex social information. Using multiple regression analysis, the study found the link between friendship quality and Facebook use achieved statistical significance only in adolescents with ASC who also had lower anxiety scores. This

suggests social media could be a good way for adolescents with ASC and without significant anxiety, to improve (or at least maintain) the quality of their friendships.

Similarly, Burke et al. (2010) conducted a small-scale study on adults with ASC suggesting that participants used social technology to seek greater social connectedness and take advantage of interest-based online communities to foster successful and supportive relationships. However, social technology was also found to intensify problems of trust, inflexible thinking, and perspective-taking, making it difficult for some to maintain relationships (Burke et al., 2010). This suggests there is a complex interplay between existing communication needs and how these might convey onto online social situations.

Overall, whilst social isolation, weak offline social networks, and poor social skills are unlikely to help develop quality friendships online (Katz & El Asam, 2019), adolescents with social communication needs, such as those with ASC, might be a unique subgroup who appear to be able to socially compensate for a unique communicative style through online interaction (van Schalkwyk et al., 2017). To support effective use, intervention and guidance around perspective taking and understandings others' intentions online would be beneficial to adolescents with communication needs (Burke et al., 2010; Morris, 2019).

A key issue with existing research on participants with ASC is that studies have restricted exploration of social media and technology use to a single social networking site (van Schalkwyk et al., 2017). With technology being multi-faceted and use being multi-functional (Ofcom, 2020b), research which asks adolescents about only one platform might be getting a narrow picture. Also, most studies which suggest adolescents with ASC use social technology less than non-ASC peers has been

conducted from parent perspectives and from positivist approach (Mazurek & Wenstrup, 2013). As studies which compare parent and child reports demonstrate that adolescents with ASC have distinct perceptions of their peer relationships and their anxiety (van Schalkwyk et al., (2017), it's important to include adolescent views in research. This type of research could provide further insights into the social lives of SEN students by exploring what is beneficial for ASC by socialising online (and therefore motivate use), as well as what might be challenging for them.

It should also be noted that within the small body of research with participants who have communication and interaction needs, mostly all studies consider the experience of adolescents with ASC and do not include those with SLCN. This methodological decision means samples within studies are fairly homogenous which is a strength but care should then be taken when generalising findings to CYP with SLCN.

2.7 Opportunities for autonomy and competency

The project by Mandy and Hull (Morris, 2019) found control in choosing when and how to engage with others and interacting on their own terms was seen as beneficial by adolescents with ASC involved in the project. The desires to have the ability to control one's own behaviour and actions relates to the basic need for autonomy. A sense of autonomy is important for wellbeing (self-determination theory) and individuals gain this by making choices about what happens in their lives and contributing towards decisions that affect them. Adolescence is a developmental period when young people experience an increased need for autonomy whilst developing their own identity and navigating peer relationships (Shifflet-Chila et al., 2016). Related to self-determination theory, research by Zilka (2018) suggests adolescents make informed choices of media use depending on the properties of the communication technology, its

capabilities and advantages over other methods. One way to do this is use technology to manage social interactions.

As most online communication is asynchronous, the level of editability is much higher than face-to-face communication and this means communication can be adjusted before it is transmitted (Walther, 2007). For adolescents with communication and interaction needs, this provides opportunities for autonomy in choice and competency in choosing technology which can play to their strengths. Self-determination theory, which first grew out of the work of psychologists Deci and Ryan (2000), suggests that basic psychological needs of feeling related, competent and autonomous is crucial for wellbeing and that some contexts facilitate these psychological needs more effectively than others. The conceptualization and definition of self-determination varies according to its theoretical orientations but the two key assumptions of the theory are that the need for actively, self-directed growth drives behaviour and autonomous, intrinsic motivation is important for well-being. For adolescents with communication and interaction needs, who appear to have fewer opportunities to exercise autonomy in social settings offline, technology could be particularly attractive in gaining feelings of competency as they can use an interest-based approach.

Adults with ASC have characterized the Internet as a liberating environment where they can interact with others on a more equal basis (Benford & Staden, 2009) due to this increased controllability (Gillespie-Lynch et al., 2014). This relates to the social compensation hypothesis (McKenna et al., 2002) in that those who perceive their offline social networks to have undesirable characteristics seek to compensate by developing more extensive online social networks (Valkenburg et al., 2005; Valkenburg & Peters, 2007).

Hedges et al. (2018) utilised a self-report survey on adolescents with ASC which enquired about their everyday use of communication technologies (e.g., smartphones, laptops, tablets, and desktop computers). The study examined how secondary school aged pupils with ASC used technology in ways which felt supportive to them at home and at school. When asked how else participants used technology at school, 112 responses to the question were grouped to include: complete work and learn, organisation, reduce stress and focus and communication. Of the respondents, 92% reported using technology to communicate and socialise at home or at school. The most common tools used were phone (81%), text (69%), email (60%), Facebook (47%) and video calls (41%). The research reported that 60% of the respondents were active social media users. Talking to friends (81%) and family members (74%) and to make new friends (47%) were some of the key reasons participants gave for why they use technology to communicate or socialise.

Interestingly, 32% of respondents reported using technology to communicate or socialise in order to avoid talking to people face-to-face (Hedges et al., 2018). Again, this finding could relate to the competency element of self-determination theory (SDT) which refers to having the capabilities to achieve the task at hand (Vallerand & Ratelle, 2002). Social media, email, and texting can expand opportunities for social interactions and be far less intimidating for children with SEN who might struggle to engage in face-to-face relations (Mazurek & Wenstrup, 2013). One way it can do this is when well-designed technology offers consistent and clearly defined tasks and visually cued instructions that can reduce misunderstandings caused by multiple verbal instructions (Grynszpan et al., 2014) and thus promote independent functioning.

As a questionnaire was used to collect data, the study by Hedges et al. (2018) could not probe further into how the use of technology by adolescents with ASC related to

feelings of social connectedness, competency and autonomy and there is room for comparison between what individual factors and activities relate to this feeling. As well as this, there is room for understanding more about which types of communication technologies were preferable to face-to-face interactions and why. Although relatively large scale (472 responses) and spread across 3 US states, the study included participants aged between 14 to 21 years meaning younger adolescents were not included. A strength of the study was that it vetted the questionnaire tool for accessibility and efficiency and then was subject to a pilot test with 6 pupils. Additionally, the study is one of very few to approach use of communication technologies by adolescents and young people with communication and interaction needs through a positive lens and suggests future research from such perspectives would be useful.

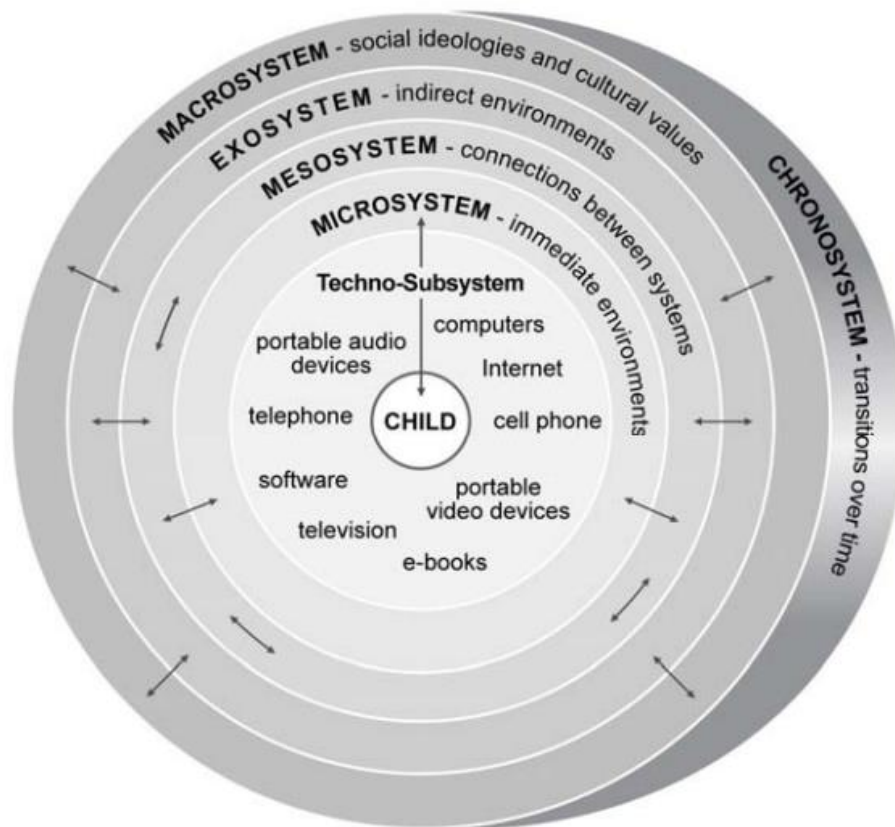
2.8 **Identity development theory and technology**

A key theme in research studies concerned with adolescents' use of communication technologies is that of opportunities for identity development. Technology offers new social contexts where young people can experiment with and explore different aspects of identity (Frith, 2017). Social media in particular is suggested to have become an additional tool for identity formation (Children's Commissioner, 2018; Shankleman, 2020) and this could present novel opportunities for adolescents with communication and interaction needs who might have fewer offline social opportunities to experiment with identity and self-presentation. Within theories of child development, the interplay between children and communication technology is not yet widely understood or considered. Erikson (1968) argued that identity formation is a primary task of adolescence. He described adolescence as a time when identities are being explored and consolidated in relation to peers (Erikson, 1968). During this period of child

development, peer perceptions and acceptance often dictate self-worth (Leary et al., 1998) and Erikson's theory (1968) asserts that adolescents experience pressures to associate with peer groups in order to gain a sense of belonging. Simultaneously, it's also a time when separation and individuation processes occur. The role of self-presentation on social media lends itself well to these identity development processes and might be one reason why adolescents in particular use social media so much (Children's Commissioner, 2018; Shankleman, 2020).

However, similar to other earlier theories of identify development, Erikson's theory can be criticised for ignoring the wider context when compared to systemic models that theorise identity formation, such as Bronfenbrenner's ecological systems model (1994). Bronfenbrenner's ecological model (1994) suggests interactions between an individual and their environment shape their development over time. Bronfenbrenner's model (1994) provides a conceptual tool that allows us to explain how the inherent qualities of children and their relationships in their different environments interact to influence how they grow and develop. The theory has been fundamental in the work of EPs who seek to understand child development with a focus on the quality and context of a child's environment. This model, describes five levels of external influence (also known as subsystems). These are referred to as the: microsystem, mesosystem, exosystem, macrosystem and chronosystem. In the ecological model, 'mass media' is represented in the exosystem, the third level from the individual; this exosystem includes other people and places that a person may not interact with directly or often, but might still have a large effect on them. However, with the widespread use of communication technologies and consumption of media from a very young age, it could be suggested that children are no longer experiencing mass media as a distant influence. As such, EPs and other practitioners who use Bronfenbrenner's model to

consider child development, could take into account this change in activity and context when seeking to understand their motivation to use communication technologies. As a development to the ecological model (Bronfenbrenner, 2005), Johnson and



The Ecological Techno-Subsystem (Johnson & Pupilumpu, 2008, p.6)

Pupilumpu (2008; Johnson, 2010, p. 178) proposed a “techno” level could be considered as a dimension of Bronfenbrenner’s ecological model (see image above). The authors of this paper acknowledge that the proposed subsystem is not yet established nor investigated but prompts psychologists to consider the relevance of existing child development theories. Certainly, the time alone which children and young people spend on their devices, away from people even within their immediate home setting, should raise the question of why this should not be considered a closer level than at the exosystem (Bronfenbrenner, 1994).

2.8.1 Self-presentation and role of feedback

An important developmental task for adolescents, in relation to identity development, is exploring how to present themselves to others (Boyd, 2008) and fit in with their peers in order to adequately navigate the social contexts they are exposed to (Lease et al., 2002). Self-presentation is behaviour that attempts to convey some information about oneself or some image of oneself to other people and self-presentation processes also occur online, mainly on social media platforms. For adolescents, successful completion of self-presentation tasks is associated with a broad range of positive outcomes including individual well-being, social competence, and self-efficacy (Valkenburg & Peter, 2011).

When engaging in self-presentation, individuals tend to control the information they disclose about themselves, for instance, by accentuating or downplaying certain aspects of themselves, or using prior social scripts to strategically influence their own self presentations. Social media are particularly suited for self-presentation in this respect since their functionalities (e.g., high visibility and the ability to edit content) provide users with new tools to perform and manage information about themselves. The deliberate and social nature of online presentations also increase opportunities to engage in a process of self-reflection and self-definition as users are prompted to articulate and validate their own self-concept (Stern, 2008). During the transitory years of adolescence, online self-presentation could thus play an important role in the development of identity (Chua & Chang, 2016). As such, social media activity might help in developing a healthy sense of self and may have an impact on users' self-esteem (Davis, 2012; Valkenburg et al., 2006). These effects may be especially pertinent during pre- and early adolescence, as interpersonal influences start to play

a critical role in young adolescents' psychosocial development (Antheunis et al., 2016).

However, research on the link between social media and self-esteem has yielded mixed results (Best et al., 2014). While some studies found that viewing one's profile or spending time on social media increases self-esteem (e.g., Gentile et al., 2012; Gonzales & Hancock, 2011), others have noted adverse outcomes such as a negative impact on self-esteem (e.g., Chen & Lee, 2013), subjective well-being (Kross et al., 2013), and increased symptoms of depression and anxiety (Primack et al., 2017). A study by Meuus (2019) examining the role of technology in building self-esteem of young adolescents found that self-presentation on social media was positively related to pre- and early adolescents' self-esteem via their perceived online popularity (e.g., receiving "likes"). However, results also revealed a relationship between online popularity and users' need for popularity, which was in turn negatively associated with self-esteem. Similar to correlations between time spent online and well-being (Woods & Scott, 2016), there appears to be a 'drop off point' at which a need to receive online validation can turn negative. The findings of this study, alongside recent literature reviews, relate to the metaphor of social media being a 'double edged sword' (Frith, 2017; Zilka, 2018).

The Children's Commissioner (2018) suggest that although children and adolescents are taking away e-safety messages from school, they are less aware of the emotional impact that social media use might be having on them. Further exploration of how self-presentation online is experienced by adolescents is needed to better understand this issue.

2.8.2 Marginalised identities

Marginalised groups often face complex choices in defining and enacting their own identities. Online platforms and communication technologies present unique opportunities for those experiencing marginalised identities to tackle some of the inequalities in social opportunities they might face offline. Technology can tackle inequalities temporarily or within certain contexts at least, in that for most social media platforms there is the standard assumption of 'normality' for all. Everyone starts off with a basic profile which they make their own by adding new media such as images, videos or information. Users can choose to share what they want only and capitalise on features of anonymity to suit what they wish to share about themselves online only.

In their study, Bowker and Tuffin (2002) recruited adult participants from various disability organisations in New Zealand and conducted online interviews to explore participants online identity representation. Their findings suggest the online 'choice to disclose' option allowed participants to access an identity removed from impairment via 'relevancy' of impairment to conversation. This means participants had a choice over what they shared and what they did not in relation to their disabilities. Additionally, the study found that 'anonymity' allowing the creative potential for identity construction. This finding relates to the autonomy, competency and choice component of self-determination theory in which self-initiation of one's own behaviour is an important intrinsic motivational factor. The study suggests that interacting with others online may provide individuals with the opportunity to successfully implement changes in their self-concept which they hope for (McKenna & Bargh, 2000) and this might be particularly attractive for CYP with various types of SEN.

However, in contrast to the study by Bowker and Tuffin (2002), Seale and Pockney (2002) and McClimens and Gordon (2008) found limited attempts were made by adult

social media users to 'hide' an intellectual disability. Instead, systematic review of the evidence on the use of social media by people with intellectual disabilities between 2000 and 2014 demonstrated that individuals in this group gained positive experiences from using social media in terms of development of social identity and self-esteem (Caton & Chapman, 2016).

Unfortunately, research into marginalised identities online is limited and dated. Although generalisations for adolescents with communication needs cannot be directly drawn from studies with adults who have intellectual needs or disabilities, the premises of the studies are applicable to various types of SEN amongst CYP. Where adolescents with communication and interaction needs might struggle to find peers in their immediate environment who they identify with, finding peers or community groups online could foster a positive sense of wellbeing and social acceptance.

According to self-determination theory, relatedness is a sense of belonging and attachment to others; it refers to the need to feel connected with others to gain warm, responsive, caring and reciprocal relationships (Deci & Ryan, 2000). Studies suggest the internet can provide a space for adolescents experiencing marginalised social identities to find peers who share aspects of their identity (Frable, 1993) and this is likely to relate to feelings of relatedness. For example, research exploring Facebook use appear to have established a link with feelings of relatedness and site use for adolescents with ASC (van Schalkwyk et al., 2017). The study by van Schalkwyk et al. (2017) suggest the unique features of social media and technology, which require less decoding of complex social information, might be one reason for its' findings. This reasoning could be applied to individuals with SLCN also who are likely to also benefit from communication which requires less decoding.

Existing theory and research recognise that identity concerns are prevalent amongst adolescents with ASC (Cage et al., 2016). Further research with this group would add to a better understanding of any social opportunities which might be afforded online or what potential drawbacks there might. A balanced approach to future studies is important considering how UK based data with individuals with various types of SEN and exposure to online harms suggest a possible correlation between needs and harm.

2.9 **Vulnerability and online harms**

Teachers of adolescents with various types of SEN suggest this group is collectively viewed as particularly vulnerable online by adults who work with them (Livingstone et al., 2012). The reasons for this are varied but often include difficulties with communication and interaction.

In a US based study, Wells and Mitchell (2014) analysed data from telephone interviews with adolescents aged 10 – 17 years who were receiving ‘SEN support’ in schools and were able to compare risk between those with and without SEN and disabilities. Within the SEN sample, 11% of participants were receiving SEN support in schools and 6% had a physical disability; the study did not differentiate further between types of SEN and used parent report of whether pupils were “receiving special education services at school” or not (Wells and Mitchell, 2014, p.205). Findings from the study suggested that pupils receiving SEN support in school were at increased risk of unwanted online solicitation than their typically developed peers. They were more likely to report receiving an online interpersonal victimisation (e.g., negative comments from others online) in the past year even after adjusting for other explanatory factors. This study was limited in that it amalgamated a range of SEN into broad groups and relied on parent knowledge to record the needs of adolescent

participants. This allowed the study to compare data between those with a physical disability to those with SEN but not amongst various types of SEN. Like Turner et al. (2015), Wells and Mitchell (2014) suggested future studies should include more specific need status information about adolescent participants so that a more nuanced analysis and understanding of needs in relation to harm can be considered. The authors also suggest that teachers and other professionals working with adolescents with SEN should assess students for risk of online victimisation. In order for this to happen, further research is needed into what specific needs are related to potential vulnerability online.

2.9.1 Online risks in relation to individuals with communication needs

In 2012 the Lucy Faithfull Foundation (Del-Manso et al., 2011) explored internet safety concerns in relation to girls with various types of SEN. The study was featured in the research highlights for the UK Council for Child Internet Safety. The research team (Del-Manso et al., 2011) conducted a small-scale multiple strand qualitative research study that aimed to gain an understanding of how adolescent girls with various types of SEN used technology, understood online risks, and how they managed risks. A focus group was held with seven adolescents aged between 13 – 16 with various types of SEN who attended special schools in either Surrey or Gloucester, UK. Findings from this study suggested that although participants were aware of online risks and the importance of not sharing personal information online, some of the participants lacked the ability to put their knowledge into practice.

Additionally, in the same study, three focus groups were conducted with teachers at three schools for children and adolescents with SEN from either Surrey or Gloucester. The three key themes reported to contribute to adolescents' online risk by teaching staff were (i) difficulty with social interaction (ii) difficulty with social communication and

(iii) restricted, repetitive, stereotyped behaviour, interests, and activities. The focus group with teachers suggested adolescent girls who struggle with social interaction offline are perceived as 'desperate' for friendship, which can make them vulnerable to accepting friends on social media and via other forms of communication technology. As well as this, it was suggested that poor social skills and interpretations of 'inappropriateness' can be worse online when there are fewer boundaries, visual cues, and immediate repercussions. As with the study by Caton & Chapman (2016), those who struggled with social communication offline were deemed to take conversations very literally online. Del-Manso et al. (2011) suggest internet safety programmes must be sensitive to the unique needs of adolescents with various types of SEN and their parents.

Although the findings and reporting of this study (Del-Manso et al., 2011) are important in relation to the current study, the report was presented as a research highlight only and so it is difficult to generalise findings without key information on methodological processes and information (as with Mandy and Hull – *reported by Morris, 2019*). The research highlight does not describe the specific needs of participants so it is difficult to explore type of need against possible online implications. Also, although the report states that "the internet can be particularly beneficial for children with special educational needs" (Del-Manso et al., 2011, p2), the study did not consider these potential benefits with the adolescents, teachers or parents included in the study. Findings reported were only related to negative associations of technology use rather than potential benefits. For example, are there ways the internet might help CYP learn about online safety? Research with young people would be needed to answer such questions, rather than the views of teachers or supportive adults.

In a more recent study, El Asam and Katz (2018) used questionnaire data collected in 2014 to analyse 5 different vulnerabilities against 4 categories of risk. Offline vulnerabilities were grouped: as 'family', 'physical', 'SEN', 'communication' and 'mental health difficulties. A total of 2988 participants (54% boys and 46% girls) aged between 10–16 years from schools and services across the county of Suffolk (UK) took part). The study was based on the premise that adolescents with SEN might be more vulnerable to online harms than their peers and that these different vulnerabilities might relate to different forms of risk. El Asam and Katz (2018) argue that vulnerable young people may not lack digital skills but that their online activity, experiences and reactions to these which might vary from those of their non-vulnerable peers. They suggest that vulnerability offline intersects with an individual's susceptibility, experience and conduct and that their judgments, risk taking, and emotional responses to own experiences can overtake their knowledge of online safety advice.

Analysis of the data suggested vulnerability offline can predict vulnerability online with an indication that specific needs can be linked to specific risks. Using multiple linear regression analysis, the data suggested that the vulnerability of 'SEN' associated with 'contact' risk and that the vulnerability of 'communication' associated with 'conduct' and 'cyberscam' risk. Conduct refers to young people's conduct online (e.g., gambling) while contact refers to online relationships (e.g., sexting); cyberscams refers to being involved in, or being the victim of, online scams (e.g., hacking).

Similar to Wells and Mitchell (2014), El Asam and Katz (2018) suggest offline vulnerability extends to online life and enhanced, targeted online safety education and support is required. El Asam and Katz (2018) suggest that, whilst there is potential for online harms, the online world can also offer positive opportunities, enjoyment, support, learning, and friendship to adolescents with SEN. If these are denied to a

because he or she is deemed unsafe online this could represent another layer of deficit to those already being experienced. Other research reviews also suggest that despite online risks, restriction from internet use and less exposure, is not the answer, suggesting this would only stunt 'digital literacy' and lower opportunities for children and young people (Frith, 2017).

It should be noted however that findings from the study by El Asam and Katz (2018) highlight the challenge of generalising research findings from available studies to different groups of CYP with SEN due to issues with defining 'SEN'. Interestingly, El Asam and Katz (2018) categorised 'communication' difficulties as those related to having English as an additional language or having speech or hearing difficulties. The category of SEN included 'those who have learning difficulties or other forms of SEN' (2018, p. 288). Although conducted in the UK, the use of different definition of 'SEN' compared to the SEND code of practice might be because the research was conducted from youth safety perspective in general rather than to inform educational or EP practice. Also, the study by El Asam and Katz (2018) is not peer-reviewed and it's acknowledged that there are differences in how needs are being categorised in comparison to the current study. Nonetheless the study is one of very few in the UK to consider how offline needs might be conveyed online and the authors have created useful tools to help bridge understanding between CYP and adults who care for them in regards to online harms (e.g., see 'UKCIS Digital Passport' co-created by Adrienne Katz for CYP in care; UKCIS, 2021). Resources like this are important considering the lack of information and advice readily available to support CYP with communication and interaction needs to navigate their online worlds effectively. Despite the UK Council for Internet Safety (UKCIS) stating in 2012 that further research with SEN groups into online harms is important, the 2017 UKCIS literature review again said

SEN children's online activities continue to be relatively unresearched (Livingstone & Palmer, 2012; Livingstone et al., 2017).

2.9.2 Cyberbullying

Research on face-to-face (offline) interactions has consistently suggested that children and adolescents with SEN are at higher risk of bullying than compared to their non-SEN peers (Humphrey & Lewis, 2008). Higher rates of victimisation could be related to difficulties with social interaction and reading social cues, as well as reactions to bullying. These are suggested to lead to adolescents with communication and interaction needs possessing more risk factors and as such being targeted (Fisher & Taylor, 2016).

Online, cyberbullying is considered the most common online risk for all adolescents and is a peer-to-peer risk (Espinoza & Wright., 2018; O'Keeffe & Clarke-Pearson, 2011). Despite distinct differences between online and offline bullying (such as anonymity and accessibility of perpetrators and victims) the effects of being involved in either scenario appear to have similar negative physical and psychological effects including depression, anxiety and low self-esteem (Best et al., 2014; Kowalski & Fedina, 2011; Kowalski & Limber, 2013).

There is also the issue of those experiencing offline bullying also being targeted online. The digital world facilitates new forms of communication which may prove liberating for a young person with communication difficulties, but alongside this there is a high risk of experiencing cyber aggression (El Asam & Katz, 2018) possibly from those who know the victim as an 'easy' target, more readily accessible via the internet. In their US based study, Kowalski and Fedina (2011) used a self-report survey design to explore cyberbullying with children, adolescents and young people aged between 10 – 20 (median age 13) who had a diagnosis of either ADHD or ASC. In the study, forty-

two participants reported high rates of bullying victimization through both traditional and electronic means. Similarly, US based survey data indicated that even when controlling for internet use, repeated school-based bullying experiences increased the likelihood of repeated cyberbullying more than the use of any particular communication technology (Juvonen & Gross, 2008).

In his doctoral research, Isbister (2013) adopted a two-phased mixed method approach to explore adolescent's use of social networking sites and their perceptions of how this can influence their peer relationships. A total of 243 adolescents aged between 13 – 15 years from across two schools within a single England local authority completed questionnaires as part of the first phase of the research, depending on whether they were users of social networking sites or not. A further 21 participants took part in semi-structured interviews. The findings suggested that use of social networking sites has generated more ways in which cyberbullying can take place and that the use of videos and instant messages on personal smart devices can feel inescapable and extremely targeted to victims (Kowalski & Fedina, 2011; Kowalski & Limber, 2007). Asynchronous forms of contact, such as text, were much less likely to be mediums for cyberbullying.

However, in his study, Isbister (2013) noted that some of the qualitative data from his research directly contradicts the notion that social networking sites are always associated with negative behaviour and an increased likelihood of cyber-bullying. By placing blanket expectations of cyberbullying alongside screen use, schools and parents could be missing the nuanced vulnerabilities where cyberbullying might be more likely to manifest. Ackers (2010) also suggested cyberbullying is perhaps not as common as may be expected considering its place in e-safety curriculum for schools. It is possible that through a universal teaching approach to online harms such as

cyberbullying, educators may be missing the adolescents who are particularly susceptible or vulnerable to victimisation. Seeing cyberbullying as a widespread problem means that those experiencing great difficulty are not easily identified. This is particularly important when considering that pupils with various types of SEN report lessons about cyberbullying and internet safety they received were not clear to them and that the most cited coping strategy of avoiding victimisation by avoiding the internet feels unrealistic to them (DfE & Anti-Bullying Alliance, 2014).

Researchers have shown a keen interest in the topic of cyberbullying and how it might relate to offline bullying or vulnerability factors; however, further research continues to be needed in exploring the relation between cyberbullying and SEN (Isbister, 2013; Kowalski & Fedina, 2011). The small amount of existing literature focuses largely on disabilities, country specific marginalised groups and with young people educated in specialist settings (Espinoza & Wright, 2018).

2.9.3 Seeking support in response to online harms

In response to online harms and exposure to online risks, some studies have explored what the most helpful buffering effects to these might be, particularly for CYP with various types of SEN. One form of support is from parents and family members. Kowalski and Fedina (2011) suggest a lack of communication between parents and child is a risk factor as almost 50% of the participants in their study indicated that their parents never or rarely discussed safety issues surrounding the internet. This was in contrast to 82% of parent participants who said that they 'sometimes' or 'often' have conversations about internet safety with their child. The finding that a discrepancy between parent and child views exists suggests it is important to consult children and adolescents about what types of support feel most helpful to them.

In another study, Wright (2017) explored the effect of parental mediation and social support from parents on the association between cyber victimization and depression. The 113 participants were aged between 12 – 17 years and from the USA (86% were male) and had a diagnosis of ASC. During Wave 1 of data collection, the participants completed questionnaires. The questionnaires prompted participants on their perceptions of parental mediation of technology use, perceived social support from parents, self-reported online and offline victimization and feelings of depression. One year later, during Wave 2 of data collection, participants completed a questionnaire again on feelings of depression only. Results indicated that the associations between cyber victimization and depression were more negative at higher levels of perceived parental technology mediation and social support, while these associations were more negative at lower levels of these variables. The longitudinal study by Wright (2017) is one of a few studies examining the buffering effect of parental mediation of technology use and perceived social support from parents towards adolescents with SEN. Further research that explores the types of mediation which were felt to be most helpful would be important.

A study by the Children's Commissioner (2018) explored social media use among CYP aged between 8 – 12 years in the UK. The research study conducted 8 focus groups with 32 children aged 8-12 to understand the impact of social media on the wellbeing of this age group. A key finding from the report was that children learned how to do new things on social media from their older siblings, but were also put off by things that their siblings had experienced. This is an important finding for parents of children to be aware of but also has implications for school-based practice and the potential role of mentoring programmes to support against online harms.

In their Singapore based study, Shin and Lwin (2017) explored how mediation from 3 different support sources associated with adolescents' engagement with online risks. The support systems considered were: parents, peers, and school teachers. The study used a survey design with 746 adolescents aged between 12 – 18 years. In their study, Shin and Lwin define 'active mediation' as "*the communication-based social interaction between teenagers and socialization agents regarding online behaviors*" (2017, p.1110). The results from the study suggest each of the 3 support systems focused on different aspects of internet and technology use when engaging adolescents in active mediation. Specifically, while parents and teachers tended to focus more on making instructive remarks (e.g., talking about information management or time spent online), peers were more likely to engage in neutral types of active mediation (e.g., helping or recommending).

Findings from the study are similar to the recommendation by Livingstone et al. (2011) in that active mediation (i.e., talking to children about their media use and patterns) is a recommended form of support. However, Shin and Lwin's study (2017) adds further information to other studies into peer-to-peer support and suggests peers might be best placed to provide each other support. A limitation of Shin and Lwin's study (2017) however is that the research tool was self-reported pen and paper pupil surveys. Whilst this allowed a large number of responses to be collated, the study could not access greater depth in terms of what else might have been considered helpful by adolescents in relation to each support system considered in the data responses.

Lastly, schools and educational settings have a key role in teaching e-safety principles and digital skills as a graduated curriculum approach. One of the useful conclusions from a research review by Best et al. (2014) suggests that well-being experiences amongst typically developed adolescent social media users are premised upon

specific online activity rather than quantifiable variables such as the amount of time spent online or number of online friends. This suggests that early education of children and adolescents on the specific pitfalls of digital platforms may enable them to avoid more harmful activities and safely manage risk. It might be that there is a specific role for teachers and parents to provide this social support to young adolescents as they develop a presence online.

2.10 Summary and Research Questions

The discussion above highlights the need to explore the digital lives of all children and young people, but particularly of adolescents with communication and interaction needs. The social lives of pupils with communication and interaction needs inside and outside of school are different to their typically developed peers and thus the potential important value that digital technology offers these students should be considered in research. Studies both inside and outside school time have suggested that children with communication and interaction needs may have fewer relationships with their peers and therefore it is important to explore their online situation.

Most research on vulnerable groups has been conducted from a risk perspective that focuses on the drawbacks of internet use for those with communication and interaction needs. There is little existing research which has attempted to engage with the views and experiences of adolescents with communication and interaction needs in order to better understand their motivations for using technology as well as what has been helpful and conducive to their positive online experiences so far. Whilst there has been extensive research interest into the potential impacts of social media and screen time on mental health and wellbeing of children and young people in the UK and in other developed countries, relatively few studies have explored possible impacts on pupils with communication and interaction needs.

This study aimed to explore the role of communication technologies in the lives of adolescents with communication and interaction needs. In doing so, the study aimed to add to current understanding of how adolescents with communication and interaction needs are using technology and what types of support might be best suited to help nurture a healthy online experience. This study sought to address the research aims through the following research questions:

RQ1) What are the reported experiences of adolescents with communication and interaction needs when using communication technologies to socialise?

This question seeks to understand the value prescribed to experiences of using communication technologies by adolescents with communication and interaction needs. What are the perceived benefits of using communication technologies and how do these relate to their motivation to use technology? What have the challenges been? How, if in any way, might these be unique to participants in this study?

RQ2) How do communication technologies support and facilitate the social lives of adolescents with communication and interaction needs? This question seeks to explore the role of communication technologies in the social lives of adolescents with communication and interaction needs. How are the adaptability features and potential of technology being used by adolescents with communication and interaction needs? What has worked well for them so far? What is particularly valuable?

3 Methodology

3.1 Overview

This chapter described the research aims and research questions. It then describes the researcher's perspectives which shaped this study, the research process and the rationale behind methodological decisions for this study

3.2 Research Aims

Research among particular vulnerable groups of children and their internet use has been less extensively researched than with typically developed CYP (El Asam & Katz, 2018). The issue with existing research is that by focusing on the overall or the general impact of social media use on psychosocial development of adolescents, any individual differences in relation to effects of online activity are not considered (Greenhow & Burton, 2011; Steinfield et al., 2008). Further research into the views and experiences of young people with communication and interaction needs will help inform the types of support that are best suited to maximise potential and guide support to minimise risk. Consequently, this research explores:

- the role of communication technologies in the social lives of adolescents with communication and interaction needs
- the perceived benefits of using communication technologies to socialise and how these relate to the motivation to use technology
- the value prescribed to experiences when using communication technologies for adolescents with communication and interaction needs

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This question seeks to understand the value prescribed to experiences of using communication technologies by adolescents with communication and interaction needs. What are the perceived benefits of using communication technologies and how do these relate to their motivation to use technology? What have the challenges been? How, if in any way, might these be unique to participants in this study?

RQ2) How do communication technologies support and facilitate the social lives of adolescents with communication and interaction needs?

This question seeks to explore the role of communication technologies in the social lives of adolescents with communication and interaction needs. How are the adaptability features and potential of technology being used by adolescents with communication and interaction needs? What has worked well for them so far? What is particularly valuable?

3.3 Philosophical approach

Social constructionism provides an explanation as to the nature of reality (ontology) and is a relativist ontological position that explains how shared knowledge is constructed and maintained (Braun & Clarke, 2013). According to social constructionism, shared knowledge is created between people through language and interactions. Since people, language, and interactions are dynamic, shared knowledge is also dynamic and changes through time and location of people.

Social constructionism acknowledges individual views are one important set of perspectives on the issue under analysis, and not the immutable perspective on any given subject (Robson, 2016). Qualitative research accepts that the researcher brings

an interpretative element (Willig, 2013). In this study, the researcher accepts that participants views are constructed through subjective perceptions of their own experiences and that the researcher may unintentionally add a level of subjectivity that could have influenced the knowledge identified.

3.4 **Research Design**

Previous research into adolescent use communication technologies and adolescent use has been influenced by positivist and realist ontological positions. Although quantitative methodologies dominate the literature concerning the possible impact communication technologies have on users, this study used qualitative interview-based methodologies that emphasise the perspectives and experiences of the adolescent users themselves (Lapan et al., 2011).

Descriptive data was collected using an online survey and semi-structured interviews were conducted to access participants' views. These two research tools were designed to complement each other i.e. the online survey gathered information such as key devices used by participants and their preferred communication platforms which was then used to partially guide the semi-structured interviews. Once the data was collected, an individual and cross-participants analysis was used to analyse the data.

3.4.1 **Two-stage design**

The two-stage research design was important as it allowed the researcher to use data from the surveys to effectively plan interview questions. This would allow access to meaningful data during interviews and allow the researcher to build rapport with participants easier as there would be shared information to draw upon.

The online survey was designed to gather basic information on how participants were using technology to socialise. The online survey was also designed to feed into the interview with participants. The survey (along with phone calls to parents of participant CYP) allowed the researcher to understand the participants situation within the pandemic context; as the research data was collected during the start of national lockdown, it felt important to ascertain how and if technology use had been impacted because of this (see Appendix D, question 10).

The results of the survey were harnessed in the design and implementation of the semi-structured interviews. As an example, as participants selected their favourite apps and devices in the online survey, they were asked the reasons for why these apps were their favourites in the interview. Similarly, participants were asked to indicate their preference for communication on the online survey and then the reasons for their selection were explored during the interview stage. The online survey also allowed the researcher to look into any apps the participants were using which were unknown to the researcher at the time. This was felt to be important to ensure the participants felt understood and to aid rapport building during interview stage.

3.5 Participants

3.5.1 Sampling and Recruitment

Participants in this study were recruited using an opportunity sampling approach. Four mainstream secondary schools within the same local authority were invited to join the study via an initial email to the Headteacher and SENDCo. Two of these schools responded and provided a list of potential adolescent pupils who fitted the research selection criteria along with contact details of their parents who had consented to an initial conversation. I made initial contact with the pupils' parents by inviting them (via email) for an introductory phone call to talk about the research purpose and design.

Parents interested in an introductory phone call were explained the research aims and had the opportunity to ask any clarifying questions before deciding whether their child could be given the consent and information forms related to the study.

The study details were also posted to an online community of Educational Psychologists called EPNET². Heron EPNET two parents, who were EPs themselves, asked their own children if they would like to take part. Although including the children of EPs as participants introduces the risk of bias, time constraints caused by the national lockdown context did not allow more time for more schools to be approached. Therefore, these participants took part in the study and the bias risk management of this is discussed in Chapter 5.

3.5.2 Inclusion Criteria

The adolescents invited to take part were required to have identified needs within the SEN area of 'Communication and Interaction'. To confirm this requirement was fulfilled, a formal diagnosis of ASC or difficulties with SLCN, where social communication need was the key need were required from the parent and school.

In each case, the pupil had to be on the school SEN register and recognised by their school as having a 'primary' need within the 'communication and interaction' broad area of need. Whilst pupils with co-morbid diagnosis were considered to take part then if the other area of difficulty was felt to overshadow communication and interaction needs then these adolescents were not invited to take part. Several pupils were put forward by schools who did not meet criteria. The introductory phone call with parents was integral in this decision and pupils who were highly anxious, not willingly communicative or avoided phone conversations were not included. This decision was

² EPNET is an online open and public forum for the exchange of ideas and information for those working within the field of educational psychology

made to protect participants as the only options were virtual interviews. Adolescents between Year 8 to Year 10 of school were considered for participation (ages 12 – 15 years). This inclusion criteria were established because statistical data on use of smart devices in the UK suggests young people begin to use the internet to socialise on a frequent basis when they are between ages 12 and 15 years of age (Ofcom, 2020a).

3.5.3 Participant Information

A total of 8 participants (5 male, 2 female, and 1 non-binary) met the selection criteria. The participants identified as a range of ethnic backgrounds: 4 as White British, 1 as British Indian and 3 as British African-Caribbean. Of the participants, 5 were bilingual. All participants were attending a mainstream secondary school at the time of interview (academic year 2019-2020). No participant had an Education, Health and Care Plan at the time of data collection (although 3 were in the process of their school applying for assessment).

3.6 Data Collection

3.6.1 Descriptive Data

Descriptive data was collected using an online survey that participants completed prior to the semi-structured interview. The purpose of this stage was to draw together a basic understanding of how the participants use communication technologies which could then inform the questions asked in the semi-structured interviews. The subsequent interviews enabled the collection of richer data to provide a more nuanced understanding of the way each participant uses communication technologies in their everyday lives.

During the data collection process, an individual case log containing relevant information gathered about each participant during the consent stages (such as each participant's needs, age and background), questionnaire responses, and initial

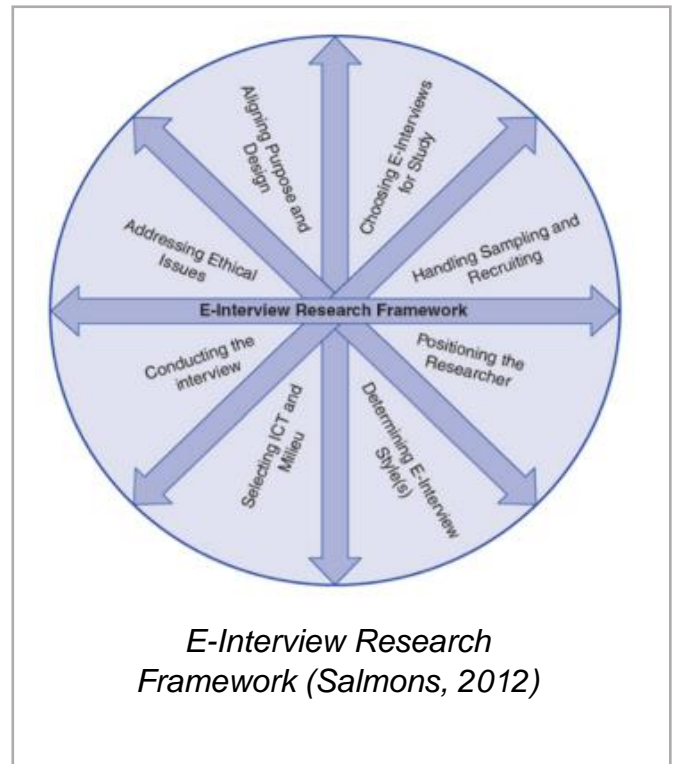
thoughts following semi-structured interviews was maintained. Due to the virtual nature of the data collection process, it was important to ensure everyone involved understood the research and that participants were able to partake without any distress. For example, it was important that the non-binary participant's profile be built so the researcher knew their pronouns before making contact with them.

3.6.2 Semi -structured virtual interviews

The interviews were semi-structured, which is a commonly used method in qualitative research that not only provides a framework but also gives the interviewer the flexibility to probe on certain issues by asking follow-up questions. The interviews were virtual interviews as they were conducted online.

As virtual interview research is an emerging method, widely accepted review tools do not currently exist. Studies that use data collected through virtual interviews follow the same fundamental steps and thinking involved in any qualitative research but the virtual nature adds an important dimension—the technology. When the direct interaction between researcher and participant occurs through communication technologies, technology is more than a simple transactional medium. The human qualities so important to interview communications are experienced differently (Salmons, 2010) and these were considered at each stage.

Salmons (2012, p.10) offers the 'E-Interview Research Framework' which proposed eight interrelated categories of key questions that can help a researcher think through the design of a study that uses data collected through e-interviews. The circular framework aims to generate ideas and questions about key features of online interviews, relationships between those features, and the underlying mechanisms that make online interviews successful for generating rich



usable data. Taken one by one, the categories suggested in the framework are not significant, but when considered together they provide a comprehensive picture of the study at hand and help illustrate set an appropriate context for the virtual interviews.

3.6.3 Selecting ICT and Milieu

Qualitative interview data is unique in that the researcher is the instrument for data collection. The researcher must draw on human qualities of building trust, perceptive probing, and reflective listening whilst conducting interviews (Salmons, 2012). To create the most comfortable milieu possible, it was decided that participants would be best placed to make the choice of selecting the type of synchronous communication technology for the virtual interview.

Based on participant preference, interviews were conducted via WhatsApp (which allowed the use of voice notes and emojis by both the participant and researcher), video-call, and voice-call. One interview was conducted offline (face-to-face).

3.6.4 Design of data collection tools

3.6.4.1 Online survey (stage 1)

The technology for online survey research is young and evolving (Wright, 2005). Online survey approach provides convenience in several ways, for example, a) respondent can answer at a convenient time; b) respondent can take as much time as they need to response questions; c) respondent can complete survey in multiple sessions (Regmi et al., 2016). Another advantage of utilising online surveys in research design is online surveys save time by allowing researchers to collect data while they work on other tasks. Responses to online surveys can be transmitted to the researcher immediately via email which allows researchers to conduct preliminary analyses on collected data while waiting for other responses to come through. This first data collection stage was particularly useful in this research study as interview schedules (stage 2) were slightly personalised for each participant based on their responses in the online survey. The online survey questions are study. This provided in Chapter 4 alongside participant responses.

3.6.4.2 Semi-structured interviews (stage 2)

In qualitative research, the most widely used method of data collection is semi structured interviews (Willig, 2008). From a theoretical stance, semi-structured interviews are flexible and encourage interviewees to provide in-depth information about a specific topic, allowing for a rich understanding of the participants' views and experiences to be gained (Howitt, 2010). Therefore, their use is in-line with the social constructionist approach adopted by this research, as the discourse between interviewer and interviewee can be viewed as illuminating young people's constructions of their individual understanding (Burr, 2003).

Each interview began with information sharing about consent and the right to withdraw. To build rapport, the interviewer spoke to the participant about the 'All About Me' sheet, which was sent to them prior the interview. Sample 'All about me' sheet is shown in Appendix C.

All interview schedules aimed to answer the research questions, and thus interview questions were developed from gaps identified in the literature review and were informed by themes from previous research and theory on pupils with SEN and their use of communication technologies. The main body of interview questions were organised into sections starting with experiences of socialising online, digital preferences, motivations for using technology, views on communicating online and social media. The areas of questioning were designed to align with the research aims and questions and concepts discussed in the literature review. Examples of how questions were related to research aims and the literature review and illustrated in the table below:

Research Question	Concepts discussed in literature review	Interview Schedule questioning
RQ1) What are the reported experiences of adolescents with communication and interaction needs when using communication technologies to socialise?	<ul style="list-style-type: none"> • Online communication: connectivity vs connectedness • Vulnerability and online harms • Theoretical perspectives on socialising online • Cyberbullying 	Some young people your age have found there is both good and bad things about using technology to make and keep friendships. Can you think of a time when using technology to be social has really helped you? Is there anything negative which has happened to you online?
RQ1) What are the reported experiences of adolescents with communication	<ul style="list-style-type: none"> • Digital use - preferences and motivations for use 	I can see you chose ____ as an app you would use to socialise with friends. What you like about this app?

and interaction needs when using communication technologies to socialise?	<ul style="list-style-type: none"> • Theoretical perspectives on socialising online • Gaming as social function • Cyberbullying 	Can you tell me anything you dislike about the ___ app? You said you would definitely not use ___. Why would you definitely not use this?
RQ2) How do communication technologies support and facilitate the social lives of adolescents with communication and interaction needs?	<ul style="list-style-type: none"> • Social Media views and experiences • Social opportunities outside of school • Online communication: connectivity vs connectedness 	You said you have some Social Media accounts. When did you first start using SM? On the survey you said you have friends online who you have not met in-real-life. Prompt.... Who are these people? Are they important to you?

The researcher remained flexible in using unplanned questions, following information pupils provided (Robinson, 2014). All interview schedules included an introduction, warm up questions, main content and a debrief (Gillham, 2005) but a flexible method of questioning was deemed appropriate when considering the interview population who are identified as potentially vulnerable (Alderson & Morrow, 2004).

The interview was piloted with a participant and some changes were made to questions. An example interview schedule can be found in Appendix D. A list of prompts and follow up questions were prepared to help participants elicit views whilst remaining non-directive during the interview.

3.7 Data analysis

The data collected via semi-structured interviews were analysed over two distinct phases using thematic analysis (see *Table 1 for detail*), as proposed by Braun and Clarke (2006). Thematic analysis is a way in which qualitative data can be analysed.

The flexibility offered by thematic analysis was appropriate to the two-stage analysis approach chosen for this study. The decision to analyse data individually and then across the cases was made to emphasise individual factors which might contribute to the level of online well-being. Without this approach, individual differences between participant experiences and views might have become amalgamated unduly. As such, an indicative approach to individual participant interview analysis was completed. An exploratory cross-case analysis was then completed to access themes across the data set that answered the research questions.

3.7.1 Individual case analysis

An inductive approach to individual case analysis resulted in the development of several themes for each participant. Inductive analysis is a bottom-up approach that allows codes to be generated that are not shaped by existing theory (Braun & Clarke, 2013). The inductive approach and analysis of individual data was considered important in order to recognise the individual experiences of participants in relation to their own strengths and needs. The first stage concluded when individual case analysis, with coding and thematic maps, were formed for each participant.

3.7.2 Cross-case analysis

To reduce duplicity and promote transferability of findings, an integrated cross-case analysis was also conducted i.e., searching for common themes across participants. An exploration across the data was then conducted to identify whether the themes helped answer the research questions and if there were any miscellaneous codes or themes that could add further depth to the exploration of participants' views and experiences. This process is akin to a hybrid approach of thematic analysis.

Although presented in a linear fashion in Table 1, it should be noted that the thematic analysis process was cyclical and phases 2-6 were revisited multiple times. At each

stage of the analysis the researcher attempted to adhere to the 15-point checklist of criteria for 'good' thematic analysis (Braun & Clarke, 2006, p.37).

Table: Phases of Thematic Analysis (Braun and Clarke, 2006) and their adaptation/operationalisation within this study

Phase	Process	Application in current study at individual and across case analysis
1. Familiarisation with the data	Reading and re-reading transcribed interviews, noting down initial thoughts and ideas	After listening to the recordings, the researcher transcribed the interviews. To ensure contradictions within and between individual accounts were not disregarded, each participant's data was coded separately (Braun & Clarke, 2013). Complete coding was utilised so that all information relevant to the research aims were identified. The researcher made initial notes which included first impressions, questions and assumptions about the data which incorporated the researcher's reflections during the interview process.
2. Generating initial codes	Coding interesting features of the transcripts systematically across the data set and collating evidence relevant to each code. NVivo 11 was used to collate and organise codes.	As described by Braun and Clarke (2006), semantic codes are based on surface-level meanings of data and latent codes involve a degree of interpretation. All transcripts were coded using a combination of semantic and latent codes. A code could be a phrase or sentence. The coding process was inductive and data-driven rather than relying on a theoretical framework.
3. Searching for themes	Collating codes into potential themes and gathering all data relevant to each potential theme. Individual thematic maps were created for each participant.	After coding, the researcher generated sub-themes and candidate themes for each participant by searching for patterns in each participant's narrative. A hybrid approach of inductive and deductive coding and theme development was used (similar to that described by Fereday & Muir-Chocrane, 2006) to create a combination of semantic and latent candidate themes from the data. The purpose of this was to later allow cross-case thematic analysis which enabled comparison and contrasts to be identified between the participants. Miscellaneous codes that failed to answer any research question but were deemed important were also collated and reviewed during later stages. After individual analysis, the researcher then looked for

		patterns emerging across cases and generated overarching themes through a cross-case thematic analysis.
4. Reviewing themes	Checking and reviewing if the themes work with the coded extracts and the entire data set. A thematic map of the analysis was created.	The overarching themes from the cross-case analysis were linked back to the transcripts and the individual-case thematic maps. Overlap between sub-themes and themes were clarified at this stage.
5. Defining and naming themes	Ongoing analysis to refine each theme and tell its' story. Generating clear definitions and names for each theme.	Theme boundaries were established and the researcher chose descriptive names that were refined following supervision discussions. Names were made as concise as possible whilst still encapsulating the data which formed them.
6. Producing the report	As a final opportunity for analysis, quotes were reviewed and selected for their vividness in eliciting the themes. Findings from data analysis were related to the literature review and in relation to the research questions in order to produce a report of the analysis.	An account of use of reflexivity in the analysis process (illustrating sequential analyses) is provided in Appendix M. Themes were evidenced in chapter 4 and interpreted in chapter 5. Selected evidence for presentation was shared with research supervisors to discuss its relevance and impact. Reflections which informed these successive revisions, en route to finalising the account of the findings in Chapter 4 and 5.

3.7.3 Use of NVivo during thematic analysis

The computer software program NVivo10 was used to assist the process of analysis. Specifically, NVivo was used to assist the process of selecting relevant transcribed data and recognising meaningful and coherent codes. NVivo also assisted with the process of merging and re-ordering of different codes into overarching themes and subthemes. The advantage of using NVivo was that it gave more capacity and flexibility to review the data set and greater scope to experiment with the generation and reordering of codes and themes. At times, codebooks were also printed out, cut into individual parts, and organised by hand.

3.8 Ethical considerations

Ethical considerations, guided by those outlined by the British Psychological Society (BPS, 2017) and the Health Care Professional Council (HCPC, 2015) were adhered to throughout the research process. This study was granted ethical approval by the Research Ethics Committee at the UCL Institute of Education and a data protection number was obtained from the UCL Data Protection Office. The researcher also obtained an enhanced check from the Disclosure and Barring Service (DBS) enabling them to work with vulnerable children and adults. The ethics committee reviewed the extended considerations of safeguarding, accessibility, informed consent and confidentiality and privacy. The following section involves a summary of some unanticipated or prominent considerations.

3.8.1 Informed consent

It was essential that throughout the study participants were fully aware of the purpose of the study and how their information will be used. An introductory phone call with the parent and participant ensured there was a shared understanding of the purpose of the interview. At the start of interviews, participants were explained they may skip any

question or stop the interview at any time. Participants were asked to show their understanding of this before the virtual interviews continued.

3.8.2 Confidentiality and Privacy

Due to virtual data collection, care was taken in regards to confidentiality and privacy. The collected audio and WhatsApp data was saved on a smart phone which was used solely for this research study. In this study, participants were asked to choose an alias for themselves that could be used in the research report.

3.8.3 Accessibility

Participants were offered the chance to use a platform for the interview which suited them best and were encouraged to use all features they would usually use for ease. For example, when using WhatsApp for an interview, the participant chose to respond with voice notes rather than typing. Every type of communication technology has its drawbacks and strengths and the researcher must decide how the pros and cons will construct or obstruct the interview. Using semi-structured interviews and allowing participants to choose their preferred medium for the interview required careful thought when planning the interview questions and suggested probes.

With text-based interviews, the issue of expecting long written answers from participants, or the researcher needing to respond quickly to hold their attention, was present. To manage this, the researcher used voice notes to make sure responses were quick.

3.8.4 Dissemination of findings

Implications and findings from the study will be disseminated to the parents of the participants, the schools that took part in the study, and the EP service and University where the researcher conducted the research.

3.9 **Rigour and Trustworthiness**

Compared to terms such as validity or reliability, some literature suggests rigour and trustworthiness are more applicable concepts when evaluating the integrity of qualitative research (Cypress, 2017). Yardley's principles of validity (Yardley, 2008) were implemented to ensure the rigour and trustworthiness of this study.

3.9.1 **Sensitivity to context**

The study must show sensitivity to context by having an awareness of participant perspectives. Descriptive data collected prior to the semi-structured interviews, as well as information gained from school and parent ensured that, although the study focused on online social activity, a 'curious' approach was adopted by the researcher so that participants did not feel assumptions had been made about their social lives. This was important as not all of the participants had experienced positive friendships in their lives.

Using a 'bottom up' and individual approach to the analysis showed the researcher's sensitivity towards the data by not imposing pre-conceived categories but instead carefully considering the meanings generated by participants through frequent reviews and use peer-coding too.

3.9.2 **Commitment and Rigour**

Commitment and rigour can be demonstrated by undertaking a detailed analysis. Braun and Clarke (2006; 2013) did not advocate the use of inter-coder reliability measures within thematic analysis due to the underlying realist assumption that there exists an accurate way to code the data obtained. However, the methodological decision to use peer supported triangulation and discussion within this study was led by the researcher's views on being fluid, reflexive and transparent about the research process, and to identify any possible bias that may have influence analysis.

Coding and theme developments were assumed to be subjective and interpretative processes. This means the outcomes of these processes can be stronger or weaker but they cannot be right or wrong in any objective sense (Braun & Clarke, 2013). The process of inter-coder discussions was considered more important than the 'outcome' in this study.

To provide further credibility to analysis, a fellow EP was asked to code two transcript excerpts. This activity allowed for a shared discussion and reflection on how well the researcher's coding was complete and valid. Any discrepancies in coding were resolved through discussion to reach consensus. Potential themes and subthemes, including the names and descriptions, were refined through discussion with other fellow EPs, fellow trainees, and research supervisors all studying or working within the researcher's educational psychology service and psychological research domains.

Reviewing themes relates to 'quality control' where themes are compared to the coded data to check that they translate well to the original data at each level (Braun & Clarke, 2013, p. 233). As themes were developed from my own interpretations of the data it was important that possible alternative interpretations were considered. This process was documented at each stage. For examples of initial coding alongside peer-review coding, see Appendix K.

3.9.3 Reflexivity

The researcher maintained a digital research diary which documented decisions, and thinking processes that drove the research. This helped the process of reflexivity. Reflexivity is an acknowledgement of the researcher's involvement in the research process which gives the opportunity to subjectively interpret the participants' reality. Reflexivity refers to acknowledging power, privilege, and researcher bias throughout

all phases of the research. When research is undertaken using a social constructionist lens, reflexivity should include the researcher reflecting on own values, beliefs and experiences that impact on the knowledge constructed from the research data (Willig, 2013). Reflexivity should not be static; instead, it should involve a dynamic and continual self-awareness about one's own subjectivity (Finlay & Gough, 2008). The researcher aimed to embed a state of reflexivity throughout the research process. This is documented in first person and has been divided into two sections: personal and functional.

Personal:

My inclination and passion towards the research topic were influenced by two things: my own use of technology to socialise and my experience of teaching in a primary school classroom.

As a millennial, I was in my early 20s when smartphones became economically viable for the majority of the population and the allure of sharing media quickly followed. As technology advances, I am one of the last generations that will remember life before communication technologies became a part of everyday life. I am also a user of several social media platforms and as such have personal views and experiences of communication technologies and the impact it has had on my life, as well as on my close family and friends.

As a teacher, I had made observations of how children I taught and had great relationships with would sometimes struggle during the school day – a place where there is often a 'no phone' policy – due to an online experience. As a teacher, I often wondered why we did not talk more about these experiences in school and found a lack of resources (at the time) for self-learning around this also.

A particular challenge during data analysis was not to over-interpret what participants said. I overcame this difficulty by using a strict and objective process for analysing data as well as utilising peer-coding on more than one occasion.

Functional:

My role in functional reflexivity can be considered in terms of the methodological decisions undertaken during this study. This is indicative of my practice as a trainee EP in which I am keen to use accessible, evidence-based methods to highlight individual voices. In this sense, this study provided me with an opportunity to hone my research skills and build on professional practice.

Etherington (2004) reflected on the dilemmas caused by dual relationships or current boundary issues and urged researchers to be aware of these to conduct ethical research. A particular dilemma that I faced with some participants during data-collection was related to a possible power imbalance between the participants and myself or role confusion (trainee EP versus researcher). This was evident through parental expectations when they expected me to offer information and support or guidance. Parents were often receiving communications from their child's school about home-learning and I had to be clear that my research was not a learning activity or something they had to take part in.

3.10 Pandemic context and impact on methodology

This research took place at the start of the covid-19. The pandemic directly influenced the research process and decision making as interviewing CYP in person, using technology to support the interview process was no longer an option. After an initial pilot interview (which was face-to-face, the interview process was moved online.

The pandemic also indirectly influenced the research process as it's highly likely that CYP might have had a more positive view on social media and technology because during the pandemic, it was the only real way to stay connected to others. It's also possible that during this pandemic, social media posts and interactions were more positive than usual as communities tried to come together to manage the impact of the pandemic on collective well-being.

3.11 **Summary**

This chapter outlines the methodology used to produce the research. Data from online surveys and semi structured interviews with 8 young people made up the participant sample. Although efforts were made when implementing the research design to ensure rigour and trustworthiness can be claimed throughout the research process (e.g., use of Yardley's principles), there are limitations to the generalisability and transferability related to the selected research tools and these are acknowledged by the researcher.

In qualitative research, transferability concerns only to case-to-case transfer (Tobin & Begley, 2004). While thematic analysis is flexible (Braun and Clarke, 2013), this flexibility can lead to inconsistency and a lack of coherence when developing themes derived from the research data (Nowell et al. 2017). As described above, to promote transferability of findings, an integrated cross-case analysis was conducted but it is acknowledged that as the sample was naturally not homogenous, the findings are not generalisable to all pupils with SEN.

4 Results

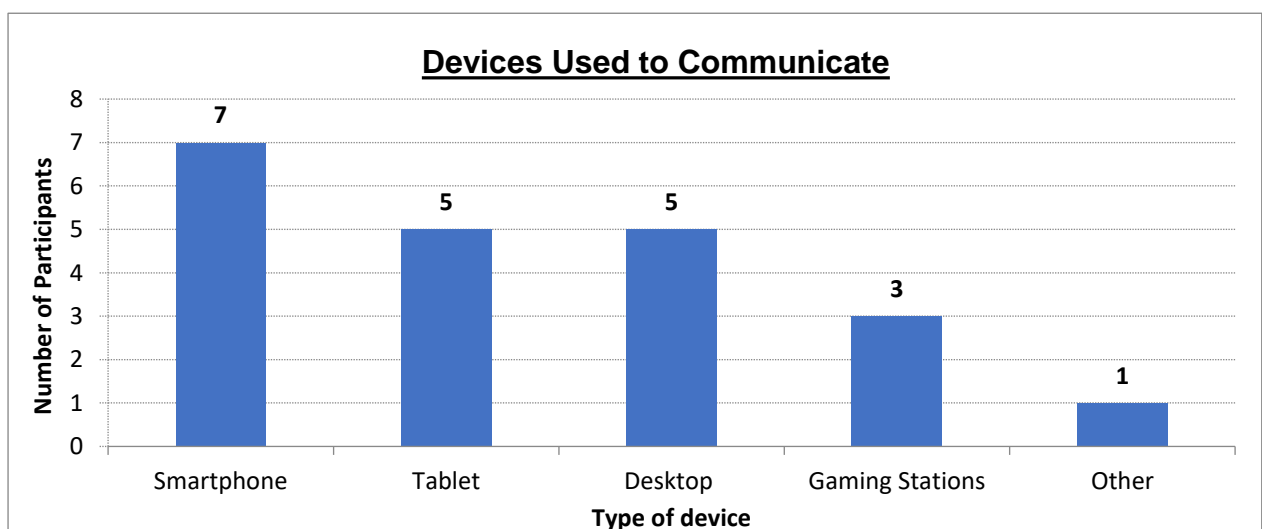
4.1 Overview

This chapter shows the data collected via the online surveys and illustrates the online activities pursued by participants using various technologies. Participant responses are discussed where relevant and a table of participant information can be found in Appendix B. Each participant's case analysis is then presented in alphabetical order, with a description of the overarching themes that emerged from each interview. Finally, the findings from the cross-case analysis and relevant interview quotes are presented to exemplify the key themes that emerged.

4.2 Online survey data

In response to a question about the devices used to communicate with friends and family (see Figure 1), all 8 participants said they used more than one device and personal smartphones were the most popular device used. One participant, Charlie, said they³ did not use a smartphone to communicate, and one participant, Lola, selected 'other' and shared that she communicates with her parent's smartphone. The 3 participants who said they socialised via gaming stations were male.

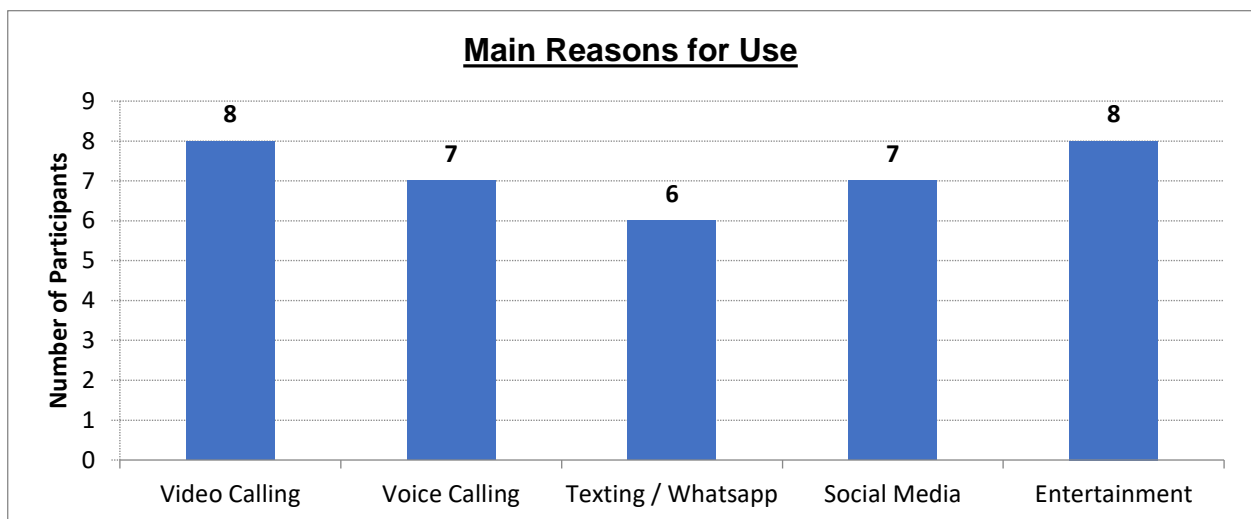
Figure 1: *What devices do you use to speak with friends or family?*



³ Charlie's preferred pronouns are 'they, them, their'

All 8 participants selected 'video calls' and 'entertainment' as key reasons for using their devices (see Figure 2). Voice calls, texting, and WhatsApp were also popular reasons for using devices. Aside from Luke Sky, all participants said they used their devices to access social media. During Luke Sky's interview, it was established that he uses WhatsApp does not identify this app as a form of social media.

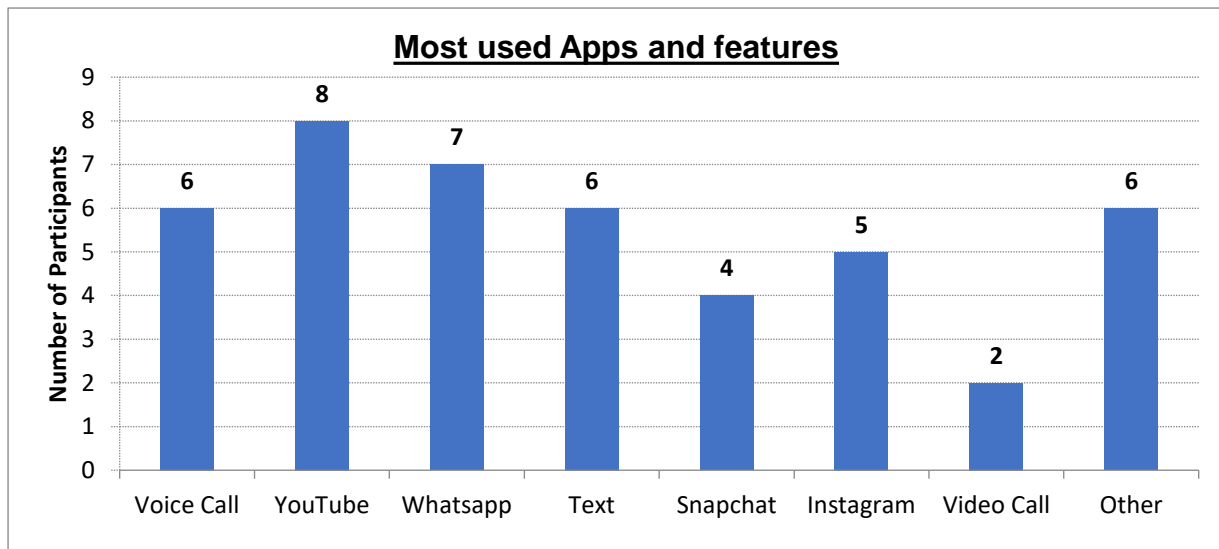
Figure 2: *What are the main reasons for using your devices?*



YouTube was the app which all participants reported using the most. Amongst 'other' apps and features used, participants described using: gaming apps on their phones, apps on laptops which allow video calls (e.g., Skype), group gaming apps (e.g., 'Among Us' and 'House Party') and video editing apps (e.g., iMovie).

In response to a question about social media profiles (see Figure 3), all participants reported using at least one social media or social networking site.

Figure 3: *What are the apps or features you most use on your devices?*



4.3 **Findings from individual case analysis**

4.3.1 **Ava**

At the time of the telephone interview, Ava was 15 years old. Ava is on the SEN register at her school for Communication and Interaction needs related to speech impediment. She lives at home with her mother and siblings. Two overarching themes emerged from Ava's interview in relation to her use of online devices: 1) maintaining social connectedness and 2) Increased risks associated with digital profiles.

In relation to theme 1, Ava spoke about the importance and value of technology and the internet in maintaining her social and personal relationships. She has a younger cousin, who she refers to as her brother, and other family in Nigeria who keep in touch with her using a smart phone to video call. As well as this, the internet allows Ava to socialise with her friends from school and her local community. She described this contact as an extension to her real-life socialisations with them. Ava described

different 'tiers' of relational proximity which impact the types of technology she uses for communication. For example, she said she would not video call someone she does not feel close to but would be happy to message them via text or social media.

Ava's phone provides her with entertainment and the chance to 'follow' people who inspire her as well as a way to learn about things of interest to her.

Related to theme 2, Ava explained that there are drawbacks to the constant stream of interaction possible via technology and the internet. This constant access to social information was described as a positive overall, but Ava shared how this also means increased chances to judge others' online. This includes use of filters on social media images i.e., wanting to use them, but sometimes being judged by others for doing so. Ava shared not wanting to maintain a constant digital presence. She was wary of a wider group of people always having access to photos or videos of her online and finds this tricky to manage.

She also suggested managing time away from her phone was tricky and that disconnecting from the internet was one way she tries to maintain distance from her phone. Ava showed understanding of e-safety but also showed risk taking behaviours which she rationalised when speaking to me. On one occasion, Ava has spoken to a stranger online (an elder male from Jamaica) who she initially thought to be 'safe' but then realised was not, as the talk became inappropriate. She dealt with this by blocking and deleting him from her social media app.

4.3.2 Bobby

Bobby's interview was conducted via text message and voice note features using WhatsApp. At the time, Bobby was 13 years old and lived at home with his parents, younger sibling and pets. At his school, Bobby is on the SEN register for

communication and interaction needs related to his diagnosis of ASC. Three main themes emerged from Bobby's interview: 1) valuing time spent socialising online, 2) technology allows additional thinking time and 3) learning from experiences.

Bobby uses a range of communication technologies to socialise with friends and family, and theme 1 encompasses how he shared this was a valued part of his day. He described how socialising as a larger group is particularly enjoyable online as you can take part in shared activities (e.g., gaming) and this allows him to feel a sense of togetherness with his friends. He mostly liked to 'play' with friends and so speaks to them in a synchronously as they play games; Bobby particularly values this activity as it feels 'in the moment' with friends:

"I just play for fun. And to speak to them. To catch up on things. I wouldn't play as much if I couldn't catch up with them. It's like being at lunch at school but over a computer" [Bobby]

As well as this, Bobby enjoys sharing photos of himself on social media and said that it feels good when he receives 'likes' on his content.

In relation to theme 2, Bobby appears to make conscious choices about which technology he uses to communicate. Bobby spoke about how his Autism can make it more difficult for him to always know what a peer means to say without them being in front of him but that communicating via technology feels easier to him as it gives him time to think before responding to others. In this way, he uses technology to better manage social interactions and feels a sense of success from using them.

Forming theme 3, Bobby spoke about rules he knows for keeping himself safe online and shared how this was learnt over time through his online experiences along with school and parental support. He expressed having developed resilience when others

may not have 'liked' his created content and he related to not needing others' approval. It was important to Bobby to only have online friends who he knows offline too.

4.3.3 Charlie

At the time of Charlie's video interview, conducted via Skype, they were 14 years old. I have had previous involvement with Charlie, as the school's link EP. Charlie lives with their nan and mother and has a diagnosis of ASC. Charlie identifies as non-binary. Charlie experiences social anxiety and this has impacted their ability to attend school and form and maintain friendships. Two overarching themes emerged from Charlie's interview: 1) ability to pursue interests and 2) forming virtual relationships.

Related to theme 1, Charlie spoke about how they use their laptop to pursue specific interests (e.g., Anime dolls and toys). This included learning about their interests by watching videos and following YouTubers they like as well as joining special interest forums. As Charlie's interests are relatively unique compared to their age-group, Charlie described how this online networking helped them cope with feelings of alienation from peers in their school. Charlie was the only participant who did not own a smartphone of their own. Instead, they use a laptop to access social forums.

Relating to theme 2, the ability to form friendships online and outside of school has been valuable to Charlie and their family. Through a Facebook interest group, Charlie feels they have formed at least two friendships with other persons their age who also identify as non-binary with ASC. One of these friends is in the USA and the other is in Ireland. The friendships were initiated by parental involvement and guidance in that Charlie's mother wrote the initial messages to another parent as a form of support for herself and then suggested contact could be initiated between their respective children. For Charlie, these friendships seem to meet their social needs and gives

them a sense a fulfilment and belonging which is not yet met in their school or local community.

4.3.4 Kel

Kel's interview was conducted via WhatsApp video call and he was 14 years old. Kel lives at home with his parents and sister. Kel has a diagnosis of ASC and is on the school SEN register for associated communication and interaction needs. Three overarching themes emerged from Kel's interview: 1) opportunities for skill development 2) playing together by gaming together and 3) self-agency alongside e-safety.

In relation to theme 1, Kel described how he uses technology to design digital art which he then shares on social networks. He showed me an example of his art and described how he shares designs online with the help of his parents. Kel conveyed a huge sense of achievement from his digital designs and spoke about them with enthusiasm. Skill development and being able to share his with others is important to him.

Alongside this, Kel expressed how he values his existing real-life friendships and maintains these relationships via gaming devices. This sense of togetherness forms Theme 2. To Kel, these interactions make him feel as if he is 'with' his friends, particularly as they are in real-time and playing together.

Related to Theme 3, Kel described sometimes playing with virtual friends who he does not know offline and described this as 'online friendships', that do not last long. He described strategies he follows to keep safe when gaming with unknown people and said his sister and primary school in particular have helped him learn how to be safe online.

Linked to both theme 2 and 3, Kel shared how he experienced anxiety and panic attacks related to excessive gaming in 2017. Kel received intervention to support him during this time and during the interview he spoke about coping strategies he now uses whilst gaming. He also spoke about the role his school and parents play in helping him practice e-safety and lead a healthier digital life.

4.3.5 Lola

Lola's interview was conducted via WhatsApp video call and she was 13 years old at the time. She lives at home with her parents, brother, and cat. Lola has been diagnosed with ASC and is on her school's SEN register for communication and interaction needs related to the diagnosis. Three overarching themes emerged from Lola's interview data: 1) autonomy and choice 2) maintaining relationships online and 3) value and importance of support systems.

Related to theme 1, Lola spoke about using technology to enhance her existing skill set related to her specific interests. For example, she spoke about using YouTube and recipe apps to pursue baking at home. Lola described how her favourite app allows her input the ingredients she has and it then generates recipes accordingly. She also described using an app to release stress before bedtime (i.e., by following breathing techniques).

Related to theme 2, Lola spoke about how she values maintaining her existing relationships online. Lola also values being able to socialise online as her friendships outside of school are important to her, especially when she experiences difficulties making friends in school.

Within theme 3 is Lola's account of how her mother sometimes helps her decipher online communications as she finds interpreting text by herself difficult. For example,

Lola described an incident of receiving chain mail by text. Lola found the content of the text worrying and so sent it on to her peers. This situation was later uncovered by Lola's mother who then helped her understand how chainmail works and how to manage receiving one next time.

In the recent past, Lola has experienced difficulties forming meaningful friendships in school. An incident of cyberbullying, in which Lola was the victim, was a catalyst for a change of primary school and theme 3 also comprises Lola's experiences of coping with this incident. Lola spoke about the support she receives, and feels she needs, when socialising online. Following the incidents of cyberbullying, Lola spoke about a mentor programme she was offered in school. Lola's mother and brother monitor her phone use and she welcome this support, particularly from her brother. Her social media accounts are in her mother's name for safety.

4.3.6 Luke-Sky

At the time of the face-to-face interview, Luke-Sky was 13-years old. He lives at home with his parents, sibling, and pet. Luke-Sky is on the SEN register at his school for communication and interaction needs related to ASC. Luke-Sky also has a speech delay which means he sometimes takes a little longer to say a word he is thinking. Three overarching themes emerged from the interview with Luke-Sky: 1) tools for entertainment and learning 2) worry related to online harms and 3) seeking social connection and friendships.

In relation to theme 1, similar to other participants, Luke-Sky particularly likes YouTube. Aside for entertainment purposes, he said he uses the app to find helpful videos to problem solve (e.g., fixing parts of his bike or learning to tie his tie).

When discussing using technology to interact with others, Luke-Sky shared that forming and maintaining friendships have been difficult for him, both offline and via online communication. Luke Sky described a period between primary and secondary school when he felt sad about losing touch with friends due to the transition. Luke Sky describes how he was checking his WhatsApp very often to see what time his friends were last online and feeling dejected as the date got further and further away from the present day. Luke-Sky described technical features which inform you of the last time your contacts were online made him feel even worse as it confirmed his contacts has access to their phones but were maybe choosing to not respond to him or call him back.

Luke-Sky also said he worries about danger from strangers online. Forming theme 2, he appeared to want to adhere to taught e-safety rules to stay away from potential harm. However, despite Luke-Sky knowing some strategies for how to keep himself safe online, he described needing his parents support as he sometimes felt he lacked self-control (e.g., going on the phone late into the night).

Luke Sky described experiences of worry and the researcher interpreted this to be amplified by time spent online which encouraged fixation on issues (e.g., knowing the last time someone was 'online' but did not respond to his messages). I interpreted some lack of awareness which might be associated with social communication difficulties.

4.3.7 Owen

Owen's interview was conducted via voice call and he was 14 years old at the time. Owen lives at home with his mother and siblings. He has a diagnosis of ASC and is on the school SEN register for associated communication and interaction needs. Three themes emerged from Owen's interview data: 1) maintaining existing

relationships 2) increased resilience following negative social experiences online and 3) importance of privacy and control.

Theme 1 was formed when Owen shared how much he enjoys 'hanging' with his friends online, and how social media allows him do this with ease and in real-time. He shared preferring to live stream as this is more temporary than posting content online. Owen shared how he values existing friends and maintaining those relationships online compared to wider follower 'friends'. In this way, he seemed to have established a difference between friends and peers.

Also, Owen said he likes to see what his existing friends are doing via online communication and is content with responding to them rather than posting much himself. Relating to theme 3, Owen talked about particular safety and privacy features which gives him a sense of control. For example, Snapchat notifies the user if someone else takes a screenshot of their live streak. Privacy and ownership over images of himself and his social media posts is important to Owen.

In relation to theme 2, Owen described an experience when he was younger of being left out of a group on WhatsApp and how this was a negative experience for him. When talking about this experience, Owen described feeling able to cope with this situation better if it were to happen again to him. However, he said he learnt this himself rather than through any specific support he received from home or school. Owen described how adults, mainly his parent and school staff do not understand the nuances of the digital world in which he socialises. For example, he referred to cultural and generational differences and how that led him to deal with difficulties himself:

"I just grew up and it wouldn't bother me now. If I had a problem, I would probably just deal with it myself...My mum is Jamaican and she doesn't really get social media and stuff" [Owen]

4.3.8 Ryan

Ryan was 15 years old when I interviewed him via WhatsApp video call. Ryan lives at home with his parents and sibling. He has a diagnosis of ASC and is on the SEN register at his school for related communication and interaction needs. Ryan experiences a stutter which is sometimes noticeable with particular sounds in words. Three overarching themes emerged from Ryan's interview data: 1) managing increased social situations 2) challenges related to social communication needs, and 3) building resilience following negative experiences.

In relation to theme 1, Ryan values being able to share music he makes using digital apps with online people and his offline friends. He described feelings of 'togetherness' with his real-life friends when socialising with them online and he chooses a particular medium that suits the social situation. For example, he prefers FaceTime with friends as you can 'see them', but texting is used to send a short message or to say something 'special'. While there were positives to increased social interactions via online communication, Ryan described opening himself up to increased social judgement (e.g., negative reviews of his posts) when using social media. This was something he had to balance alongside seeking social validation (e.g., wanting likes and comments on his posts).

Ryan described e-safety rules he follows to help make his time online safe. Unfortunately, Ryan has experienced cyberbullying at his current school and his experiences and views about this form theme 2 and 3. A particular incident of a meme being created about Ryan escalated at his school. Ryan did not understand at first that the meme was at his expense.

To manage social communication online, Ryan has ongoing support from his dad, which Ryan said he feels he needs. For example, Ryan described not knowing who

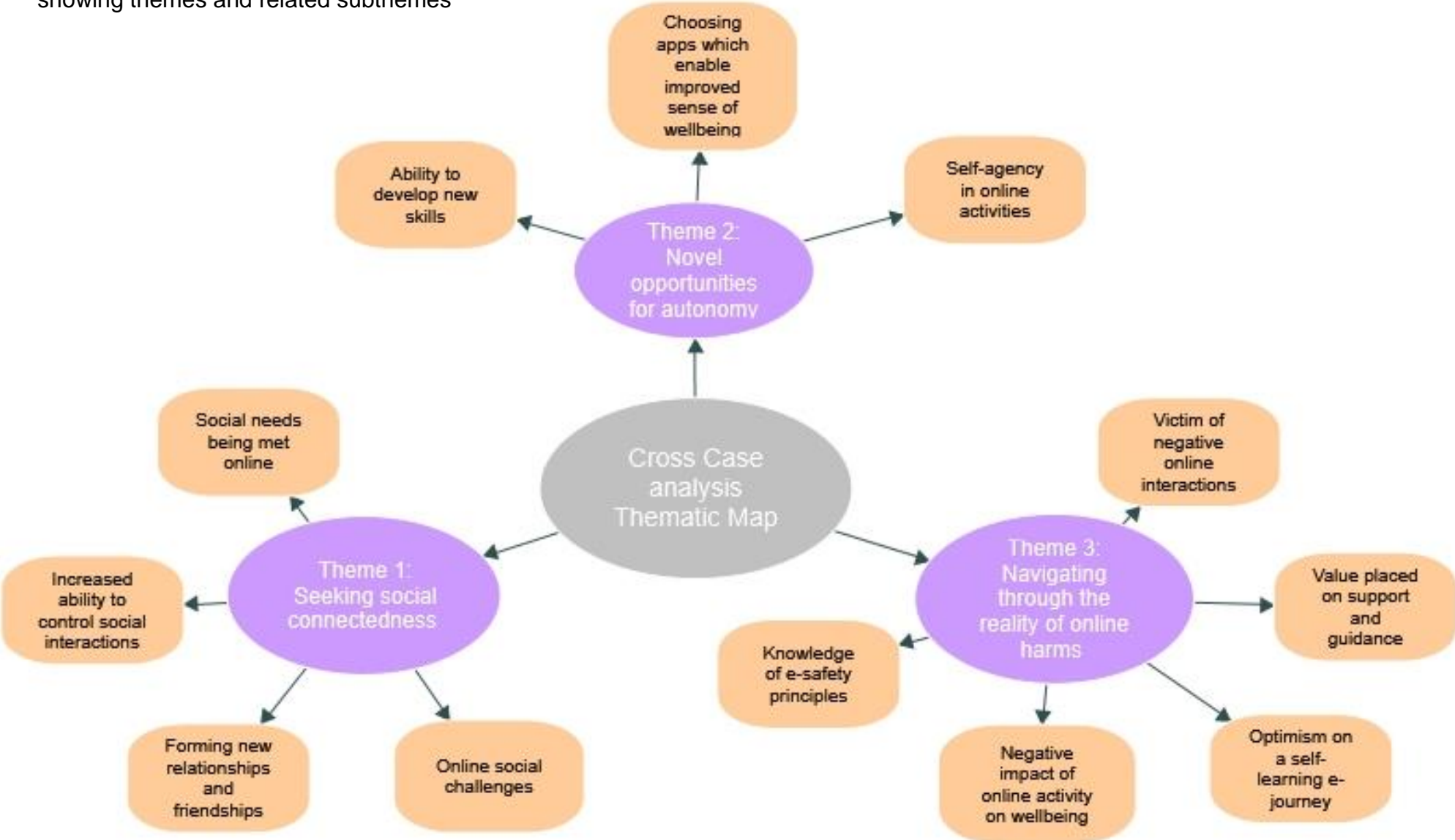
his friends were online but now feels he can differentiate between online social media 'friends' (who might constitute a 'peer' label) and those who he has existing offline friendships with, and what the difference is between the two. Ryan referred to his diagnosis of Autism and the impact he feels it has on his socialisations online and offline.

4.4 **Findings from the cross-case analysis**

The cross-case thematic analysis identified three overarching themes (see Figure 4):

1) 'Seeking social connectedness' **2)** 'Novel opportunities for autonomy' and **3)** 'Navigating through the reality of online harms'. Subthemes were also identified in relation to each broader theme.

Figure 4: cross-case thematic analysis map showing themes and related subthemes



4.4.1 Theme 1: Seeking social connectedness

This predominant theme relates to the use of communication technology to achieve social connectedness. This theme summarises how all participants used technology to pursue a sense of social connectedness with peers, extended online communities and friends and family. There were descriptions of how social needs can be met online through a range of platforms such as synchronous gaming or video call. While most participants used technology to extend their existing offline friendships, instances where participants interacted with new people online (e.g., Charlie) and thus formed distinct online relationships which were even more valuable to them if they lacked social support offline.

One of the key advantages to socialising online with others appears to be the ability to control the length and type of communication. Some talked about the benefit of having thinking time when interacting with friends and how this means responses can be planned. This can help mediate any difficulties they may be experiencing:

“...if I had a problem, it’s better to do it online than in person. It’s easier to say... It’s easier to say coz you can think about things first and then say them. That’s good for me. I need that time sometimes. Not just sometimes (crying laughter emoji)” [Bobby]

Conversely, as a consequence of technology, Lola described being unsure of her ability to communicate effectively online and described not knowing how to end a phone call with somebody. For Luke-Sky, there were also feelings of social rejection following social initiations made online, which seemed to be exacerbated by him regularly checking his device and seeing little or no response from others.

Theme 1: The associated subthemes (with number of participants whose responses contributed towards the subtheme) and codes (with number of times they were referred to in the data under each code)

Social needs being met online (7 participants)		
Ability to maintain important relations (11)	Playing together by gaming together (5)	Receiving social validation online from peers (7)
Forming new relationships and friendships (5 participants)		
Meeting new 'friends' online (7)	Seeking peers with similar interests (1)	Importance of virtual friendships particularly in the absence of RL friendships (5)
Increased ability to control social interactions (7 participants)		
Choosing CT to afford thinking time in difficult social situations (4)	Choosing CT to suit levels of comfortability with individual others (14)	Needing control over contact with others (4)
Online social challenges (5 participants)		
Uncertainty about others intentions (4)	Limited social cues via technology (2)	Enhanced feelings of social rejection and loneliness (7)

4.4.1.1 Social needs being met online

Maintaining contact with existing friends by generally being with them online appears to help meet social needs. Four participants described feeling positive emotions when taking part in group activities that provide a sense of social inclusion. Talking about a particular real-time game, Owen said:

“It’s so fun you get to pretend and be an imposter and then you work together to work out who did it. We play for hours and I laugh so much that my Mum’s said ‘Owen what’s happened’ because I laughed so loud it shocked her” [Owen]

Being able to send live streaks were also particularly valued by 4 participants who described a sense of 'togetherness' during these interactions. There was a sense that 'seeing' what people one cares about are up to helps with this and allows sharing of important social information and events in their lives. Bobby described providing support to a friend over what might have been an important time for him:

"Like my mate was playing football with his dad the other day. And I messaged him saying that's cool coz I know he doesn't see his dad a lot" [Bobby]

As well as this, 5 participants described various ways they received social validation online. Ryan felt social validation when he received comments from his existing friends on his YouTube videos. Comments on his content were much more valuable to him when they were made by known peers and friends:

"You should see how many comments I get from my mates like 'wicked' and 'fire emoji' and all that, all the time" [Ryan]

4.4.1.2 Forming new relationships and friendships

Four participants spoke about meeting people online who they then counted as online friends. For some participants this included accepting or sending friend requests to people they had known at one time (e.g., used to go to school with) as well as people who they knew through mutual friends. In the latter scenario, participants might not have met the person offline before.

There was a differentiation made between online-only friends that were made through social media or gaming and offline friends however the line between the two was a little blurred. To Ava and Ryan, everyone has the potential to become a friend that you can meet in real-life, offline. This is illustrated by Ava sharing:

".. I wouldn't meet up with someone I don't know or anything like that but at the same time I have people I know through other people and just coz I haven't met them doesn't mean I don't know them... I think really everyone can be a friend unless they prove themselves differently" [Ava]

For Charlie, who struggled to form friendships in school, virtual friendships were the only form of peer acceptance they felt at the time of the interview which indicated its significance in their life. The ability to join social networks that scope out persons with similar interests to the user was welcomed by Charlie who struggled to make and maintain friends in school. About peers in school, Charlie said:

“...I don’t want to talk to people in my school on a phone or anything. Everyone is fake and they aren’t real friends” [Charlie]

About the online friendship they had formed, they said:

“We speak about Netflix and we’re both really into Anime that’s how we met because I joined a group on Facebook for other people my age who like Anime and then we got in touch... I think it’s the best thing to happen. I would have no friends if it wasn’t the friend, I’ve met online.” [Charlie]

4.4.1.3 Increased ability to control social interactions

Three participants shared how online communication affords them additional thinking time which is useful to them whilst interacting with others. About dealing with a fallout and needing more thinking time before reacting, Bobby said:

“...if I had a problem, it’s better to do it online than in person. It’s easier to say... It’s easier to say coz you can think about things first and then say them. That’s good for me. I need that time sometimes. Not just sometimes (crying laughter emoji)” [Bobby]

Charlie used technology to control how much interaction they had with others:

“I like it this way because I can control who I speak to and where and for how long. I don’t like change and things being sudden, so it’s good for me” [Charlie]

It appeared that 5 participants selected a medium depending on relational proximity and how much they trusted a person they were communicating with. This relates to the descriptive data collected which indicated participants use a wide range of

communication mediums throughout their day. This choice appeared important to them. In all cases, video calling was viewed as the 'closest' form of communication

4.4.1.4 Online social challenges

Five participants described some social challenges that came with their online communication for them. Bobby, Kel, and Ryan related these challenges to their ASC. However, in each case, participants were unsure of the exact nature and meaning of the impact but tried to convey some understanding that ASC related needs might be linked to what they feel. For example, Kel expressed only wanting to socialise with existing friends online and, in some cases, speaking to unknown or new people virtually was an uncomfortable experience for him. About this, Kel said:

"...usually in person you have more of a fun time and you laugh and it's easier to know how people are thinking. I don't know if it's my autism or just me who I am but sometimes I only want to talk to my real friends and nobody new or it's not pleasant for me" [Kel]

Ryan described experiencing difficulty interpreting what was being said to him online:

"...so, when I was younger, I was like really not good at socialising online. I think my autism means I don't really sometimes see things how people mean to say them to me" [Ryan]

Luke-Sky described instances of online social rejection which led problem fixation. The researcher interpreted dejection from Luke-Sky's lack of social connectedness offline to be exacerbated online. This appeared to lead to a sense of loneliness for him. He said:

"Well... I haven't spoke[n] to [name] in ages. It's been like five days. He hasn't picked the phone up in ages... which is a bit hard... Well, when I'm in that sort of mood what I tend to do is I try to like - I have Star Wars Lego and if no ones like replying to me or doing that I - sorry, I get all my Lego out and I sit there putting it all into action and I play and roleplay with it" [Luke-Sky]

Luke-Sky also described some challenges associated with limited social cues online, even with video calls. It is possible he might have been describing sensory differences.

When describing how he experienced video calls, he said:

“... on Facetime you can see their face but you can’t you know – I know it’s a bit weird to say but you can’t you know, touch them. I know it’s a bit weird but... you know when you’re in English class and they tell you about your five senses, like five senses, taste, sight, like hearing, touch and.... Yea, smell... Facetime has... hear, and sight and that’s about it. And then it’s missing those other three senses, and those three senses... are mostly reality. Those are the three senses that are mostly reality to me which makes it one hundred per cent reality” [Luke-Sky]

4.4.2 Theme 2: Novel opportunities for autonomy

This theme summarises how the digital world provides new opportunities for young people in terms of connection with others, but also the chance to develop digital skills, such as video editing and digital art. Participants expressed a sense of self-agency and autonomy while exploring their digital worlds. Technology provides platforms where they can make a range of choices related to their inner motivations without too much adult interference or surveillance. Self-agency was also expressed by being able to choose entertainment that suits personal interests and meet their personal goals.

Theme 2: The associated subthemes (with number of participants whose responses contributed towards the subtheme) and codes (with number of times they were referred to in the data under each code)

Self-agency in online activities (6 participants)			
Attaining sense of achievement from online activities (10)	Choosing entertainment which suits personal interests (9)	Generational gap – dissonance between adult and adolescent (4)	Difficulty managing time spent online or on device (11)
Ability to develop new skills (5 participants)			
Developing on areas of personal interest		Videos as valuable learning resource (5)	

(4)	
Choosing apps which enable improved sense of wellbeing (2 participants)	
Using apps to support self-regulation (1)	Way of coping with negative emotions (1)

4.4.2.1 Self-agency in online activities

Bobby, Kel, Luke-Sky, and Ryan described ways in which they felt a sense of achievement through activities they engaged in online. Luke-Sky, for example, described how he could engage in a favoured activity to help replace this feeling, when he was feeling in a low mood. The researcher interpreted this as a coping mechanism for when he otherwise felt lonely or sad. He said:

“...it’s a game where I never get bored of and when I am sad or bored or need something to do I can like upgrade a house and it makes me feel better really, I feel like I’m a person who can do something” [Luke-Sky]

Sometimes there appeared to be a view that adults did not ‘get’ how important autonomy and self-agency was to participants. This view links in with the value placed on support and guidance in using technology rather than limiting its use. Owen said:

“I think teachers and adults think we’re all just nasty to each other and there are trolls and that, but the normal people like in school and stuff just use social media normally you know” [Owen]

Despite the positive associations, 3 participants did share experiencing difficulties with self-managing the amount of time they spent online or on their devices. Ryan said:

“...one thing I don’t like is it’s so addictive, like my dad has to time me or I just scroll for hours like a zombie [laughs]. It’s my autism it makes me very passionate about things, which is good, but not when it’s only social media. So, like now, my dad taught me to like practice my music for like an hour and then post about it for 15 minutes” [Ryan]

4.4.2.2 Ability to develop new skills

Five participants described using technology and online communities to access educational content and learn new skills which might not be possible without technology. While Luke-Sky described learning online about building designs and materials by playing Minecraft, Lola pursues her interest in baking, Kel described becoming more skilled at coding:

“I feel I learn some stuff from YouTube like coding and stuff. I take coding tutorials on java script. When you are bored you can go on here and watch videos and you get a lot of professional coders. I like you can skip to the bit you need, rather than a book where you need to read the whole thing” [Kel]

This learning and self-development can come from accessing resources made by other people online in either video form (mostly YouTube) or apps which cater for specific interests:

“...so, like YouTube it’s really helpful for like, let’s say, my dads’ in Wales and let’s say I was riding my bike and let’s say the wheel or the chain came off. So then, I could look up on YouTube and there’s loads of tutorials of how to fix the chain or fix the wheel” [Luke-Sky]

4.4.2.3 Choosing apps which enable improved sense of wellbeing

Luke and Lola shared how technology helps them deal with negative emotions by providing distractions or something positive to do instead. About this, Lola said:

“I have this ‘breathe kid’ app that I like. I can get a bit stressed and I have to like, like a whole day at school can be hard so I have to like do one before I go to bed” [Lola]

4.4.3 Theme 3: Navigating through the reality of online harms

This theme summarises participants' description of how they manage experiences of online harm across a range of forums and what has most helped them along their way so far. The range of harms varied and were broad. Some participants described experiencing negative online interactions, in the form of cyberbullying or receiving undesired media (such as chainmail). As well as victimisation, some participants spoke about the possible impact face filters on images might have on their self-concept and possible associated harms on well-being.

Theme 3: The associated subthemes (with number of participants whose responses contributed towards the subtheme) and codes (with number of times they were referred to in the data under each code)

Knowledge of e-safety principles (8 participants)		
Wary of possible perpetrators (16)	Utilising digital safety features (2)	Role of schools in teaching e-safety (14)
Victim of negative online interactions (5 participants)		
Viewing or receiving undesired media (3)	Experiences of cyberbullying (11)	
Negative impact of online activity on wellbeing (5 participants)		
Significant anxiety caused by gaming (1)	Images shared on social media impacting on confidence and self-esteem (10)	
Value placed on support and guidance (5 participants)		
Relationships with parents act as protective factor (18)	Role of school following conflict (2)	Siblings as important guidance and support system (10)
Optimism on a self-learning e-journey (4 participants)		

Recovering and growing from negative social experience (3)	Developing resilience to how others view you online (2)
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E-safety rules being taught in schools appear to lead to safer choices being made online. However, in terms of support towards managing online harms, there was some evidence of participants feeling as if their own experiences, albeit negative ones, were the real learning points for them. There was sometimes positive and optimistic rhetoric from participants feeling they were now better equipped to handle online threats. A role for elder siblings and parents emerged across the dataset too

4.4.3.1 Knowledge of e-safety principles

The role of schools in teaching e-safety principles came across in the data.

Participants spoke about specific learnings from school. Giving an explicit example,

Kel shared:

“...my primary school helped me a lot because we had an assembly where someone pretended to be an online friend and really, they were only pretending and they were actually very different in real life. I’m scared that will happen to me sometimes” [Kel]

Alongside this, there were two instances where participants shared some perceived differences in the quality of teaching they received with some reference to the teacher’s perceived inadequate knowledge of the digital world. About teachers at his school, Ryan shared;

“But those are the teachers that don’t care. Like they tell you about cyberbullying and that, but mostly we teach them, coz they don’t even know like the basics. Like in the lesson yea, like Miss will ask us about how to do things and we’re just like [laugh] we’re teaching you” [Ryan]

Despite this, Owen and Ryan both shared that school teachers had less of a role to play in support following more general negative experiences online due to less-developed relationships with teachers:

“I think teachers and adults think we’re all just nasty to each other and there are trolls and that but the normal people like in school and stuff just use social media normally you know...If I had a problem, I would probably just deal with it myself. I don’t feel close enough to Teachers to tell them at my school” [Owen]

During the interviews, 6 participants spoke about how they kept safe online by taking particular measures which were related to learnt e-safety rules. For Ava, the following advice was used by her in the incident where someone she considered to be an online peer turned out to be an elder male:

“...if someone’s being inappropriate, I’ll just block and report them. Sometimes you get dodgy accounts that try talk to you” [Ava]

Across the data there was an awareness of possible perpetrators online and 6 shared how they are alert to this type of imposter threat when socialising online. In most cases, this correlated with them sharing they did not accept friend requests from people they did not know offline, or if they did, they limited what was shared with them online. This suggests advice given to them has been internalised. For example, Ryan shared:

“Like the thing with Instagram and Snapchat and that is that people don’t always watch you coz they’re your mate, people just want friends to look like they have bare followers. Like I have loads but then I do ‘close friends’ for my best mates so only they can see some of my stuff coz I wouldn’t want randomers looking at my private personal things like my house or anything” [Ryan]

4.4.3.2 Victim of negative online interactions

Charlie, Lola, Luke, and Ryan spoke about being victims to, or bystanders of, cyberbullying. Experiences ranged and were not simple in nature. Difficulties with understanding and interpreting online communications were related to some

experiences. For example, in Ryan's experience, a meme was made about him and he described how, at first, he had not realised the meme it was at his expense but rather he interpreted it as a sign of popularity. In this case, his parent played a key role in intervening and helping him understand the situation. Ryan shared:

"Like even with the meme at first, I was gassed coz I thought people wow people made a meme about me but then when I showed my dad... he kind of explained that they weren't actually being very nice. So since then, I'm like that's it I'm only trusting my closest truest friends and that's it" [Ryan]

4.4.3.3 Negative impact of online activity on wellbeing

Across the dataset, 4 participants spoke about pressures related to images of themselves which are shared online. Although participants liked using filters on their images, there were some implications on how these might be perpetuating a focus on image. About this, Ava said:

"...yea I think, like me and my friends chat about this sometimes but you have to be careful of Insta and Snap and that coz like... even though, you know I said I like the filters? Yea well I do but that's the thing like you have to be careful coz sometimes you end up only thinking you look good with a filter" [Ava]

Ryan was able to describe his perception of gender differences in relation to self-image and pressure to look perfect online. When describing how he has previously had his parent support him focus on his music content as opposed to images on social media, he said:

"It's my autism it makes me very passionate about things. Which is good but not when it's only social media. So, like, now, my dad taught me to like practice my music for like an hour and then post about it for 15 minutes only. Coz otherwise I spend the whole hour like what I look like and my hair and that when it's not even about that it's the music...It's not so bad for boys compared to girls but still it's bad" [Ryan]

For Kel, the impact of gaming online with his friends was more severe. Excessive gaming had a negative impact on well-being when he suffered from panic attacks and required intervention to overcome this:

“Once I had a giant spike and I was really busy online and had a panic attack...I play it with my friends I got a bit dizzy and I know it was from that one day where I played a lot” [Kel]

4.4.3.4 Value placed on support and guidance

During interviews, 5 participants spoke about parents as a protective factor who support safer choices and guide them through difficult experiences. This ranged from Charlie’s parent explicitly monitoring their online activity, to Kel, Ryan and Lola whose parents act as more of a sounding board to decide which ‘friend’ requests were safe to accept.

For some participants, family support helped with overcoming negative experiences as well as making practical choices online. Kel described how his family helped him turn off the comments section on his posted videos as this had upset him previously as well as helping him cope with receiving ‘dislikes’ on his posts:

“... people have disliked my video and that used to upset me. So, my dad and sister helped me and now it doesn’t bother me like it used to. And it’s good [because] now it’s just positive; coz not anybody I don’t know can comment on it, so it’s better” [Kel]

For Kel, Lola, and Ryan who have elder siblings, this relationship seemed even more important than that with their parent in terms of advice and guidance. About her brother, Lola said:

“He gives me good advice and doesn’t get worried and scare me. Sometimes, I know it’s for my good but my Mum gets worried and she doesn’t tell me but it worries me. So, my brother doesn’t do that he just helps... Yea and my brother had it first so you know, checked that it’s alright and stuff” [Lola]

Following serious negative experiences, there was often intervention from either the parent, sibling or school. Highlighting the role of schools in cyberbullying incidents, Ryan spoke about conflict resolution work he took part in:

“...those boys apologised and we’re kind of mates again now anyway. Not like best brothers but like we’re cool. My teacher helped with that and we all had to sit in a circle and talk about it and that” [Ryan]

4.4.3.5 Optimism on a self-learning e-journey

For most participants, themes of optimistic self-talk during interviews emerged, particularly following a negative experience or interaction online. Owen, Lola, Bobby, and Ryan shared examples of how they felt they developed some level of resilience following negative experiences. For example, after her experience of cyberbully, Lola shared:

“Now I always know never let anybody, never get embarrassed by anything, never get upset by what people say coz I know it can just happen. You know... I’m really chill as a person now than before, I’m really chill” [Lola]

Similarly, following the meme incident, and explaining difficulties with understanding others intentions towards him, Ryan said:

“I think everyone’s my mate coz I’m just cool like that but not everyone is kind and I kind of had to learn that” [Ryan]

4.5 Summary of key findings

The four key findings from the study are described below.

Technology is a valued and accessible tool

Technology is a trusted tool and supports access to entertainment and new learning. Technology, particularly personal smart phones, enabled participants to fully exercise autonomy in choosing how they spend their time online and these choices were related

to existing interests. In particular, socialising online is attractive as it can provide communities of people with similar interests in an easily accessible way. Participants with ASC described feeling good in being able to pursue unique interests (e.g., digital art).

Technology can facilitate experiences of social connectedness

Social connectedness was described by participants who maintain established offline friendships and relationships using communication technologies. As well as and opportunities in synchronous gaming and social forums could also contribute to a sense of connectedness to others by either maintaining offline friendships or making new, online connections. The importance of existing offline friendships was inferred from the data; socialising online was described as more of a positive and balanced experience for those with existing friends to talk to online. For those interested in gaming, playing in real-time with new and existing friends was important and seen as valuable social time. One participant described experiencing particular marginalisation at school and online forums provided a space for them to form a friendship; the only friendship they reported to have.

Online communication can both alleviate and aggravate existing communication and interaction difficulties

Online communication appeared to be able to both alleviate and aggravate existing communication and interaction difficulties for participants indicating that there might be a balancing act required from users of social technology. As a benefit, participants appear to use specific technology and technical preferences to suit their communication and social needs (e.g., some control over who they interact with, how and when). Particularly for participants with ASC, time management

appeared to be an issue as well as unique social communication challenges (e.g., misinterpreting others' intentions online).

Opportunities for reflective support is important for learning about e-safety over time

Social support from family members (parents and siblings) was described to be valuable in dealing with online harm effectively. This type of support allows young people to engage in learning through reflect on their own and others' experiences and relates to experiential learning. A self-narrative process in guiding reflection and online behaviour was found.

5 Discussion

5.1 Overview

This study explored the views and experiences of adolescents with communication and interaction needs who use communication technology to socialise. Firstly, this chapter summarises the results in relation to the main research questions posed in Chapter 2. Secondly, it reflects on how the findings of this study compare to previous research and how it has contributed knowledge to the existing literature. Due to the lack of studies that focus specifically on the experiences of CYP with communication and interaction needs in relation to the social use of technology, the discussion considers the broader research and theory drawn on in the literature review relative to the findings. The wider implications of the findings, including for educational psychologists are also considered. Finally, this chapter concludes by considering some of the strengths and limitations of the research and explores areas for future study and reflections.

5.1.1 RQ1: What are the reported experiences of adolescents with communication and interaction needs who use communication technologies to socialise?

5.2 Summary of themes from this research

The themes that emerged from this research suggest communication technologies enabled participants to act with self-agency online and that this autonomy was valuable to them. Technology afforded participants the opportunity to engage in new learning and problem solving which related to a sense of competency and control over social interactions. Self-determination theory can be used to understand the motivation to use technology, particularly for pupils with communication and interaction needs.

Some participants, experienced negative online interactions which related to their existing communication and interaction needs. For example, communication difficulties such as misinterpreting others' intent online led to incidents of cyberbullying.

These challenges have implications on the current universal approach to e-safety being taught in schools. Findings from this study suggest that the curriculum should be adapted to meet the needs of adolescents with communication needs. This should include learnings about how offline needs might convey online.

The findings also suggest that, in most cases, participants knew when to ask for support in relation to online safety. Participants shared that parent or sibling mediated reflections on participants' own experiences were most helpful in coping with negative experiences. This type of support appeared to provide a springboard for personal development and increased resilience to manage potential future negative experiences. The opportunity for schools and families to provide social support and supervision, including experiential learning processes to encourage reflection, is discussed below.

5.3 Autonomy online and self-agency is valued

The results suggest technology, particularly personal smartphones, enabled participants to fully exercise their needs for autonomy. Participants chose how they spent their time online and their choices were related to their personal interests and things they enjoyed. Participants with unique interests said that it felt good to pursue those interests online with like-minded people. Socialising online was attractive to participants as it provided access to communities of people with similar interests in an easily accessible way, which also appears to link with their motivation to engage with social technology. Online activity included contributing creative content (e.g., YouTube videos, social media posts and sharing digital art) and consuming content from those they followed online. Participants described these activities as integral to their daily lives.

Similar to research with typically developed adolescents (Children's Commissioner, 2018), this study found that all participants felt online communication plays a largely positive influence in their lives. It also found that participants valued the independence and autonomy they could exercise online by pursuing their own personal interests and expressing their opinions within wider online networks. These larger online networks extend what might be socially possible within an average day for adolescents by providing access to broader international social contexts. Participants described feeling good when they received positive feedback on their own creative content and also interacting with others' creative content and commenting on those. These types of online interactions and social engagement seemed to be mostly positive experiences for the participants.

Self-determination theory (SDT) helps to explain why and how adolescents actively seek out specific media to satisfy specific needs. According to SDT, the fulfilment of the basic psychological needs of autonomy, competence, and relatedness in close relationships is considered essential for the wellbeing of children and adolescents. When applied to social technology, this theory suggests a basis for examining what motivates users to adopt social media and what gratifications they hope to derive from its use. SDT is applied in the study by Zilka (2018) which suggested that adolescents engage in a process of informed consumption with new media as online activities can meet various needs, some of which may not be being met in their offline environment. This study suggests that when participants with specific interests do not have peers either in or out of school with shared interests, online forums could provide a sense of relatedness and autonomy. This might be particularly attractive to pupils with SEN, including those with communication and interaction needs, who generally have limited

social opportunities for relatedness or autonomy inside and outside of their schools (Blatchford et al., 2015; Higley, 2017).

Conversely, some studies have suggested that children and adolescents with ASC have lower self-determination than their neurotypical peers (Fullerton & Coyne, 1999; Wehmeyer & Shogren, 2008 *as cited in Wehmeyer et al., 2010*) and peers with other developmental disabilities (Wagner et al., 2007). This is predicted to be due to CYP with communication and interaction needs having fewer opportunities to develop the component skills of self-determination or independently practice self-determined behaviours (Fullerton & Coyne, 1999; Wehmeyer et al., 2010).

This study finds that online forums and communication technologies are able to provide a virtual space for adolescents with communication and interaction needs to independently practice self-determined behaviours, and this might be a key motivational factor for technology use. Applying SDT in this way would be useful to EPs who work with adolescents, families and schools to help develop a shared understanding of observed behaviours. By understanding motivations for technology use, instances why use might be deemed 'excessive' or harmful can be better contextualised.

5.4 **Opportunities for learning**

The internet provides adolescents with easily accessible knowledge in their palms (Greenhow & Lewin, 2016) and this relates to feelings of competency and self-direction (in terms of learning processes). The results of the current study indicated that easily accessible information which helped solve the everyday questions and challenges of the participants is one of the key reasons they enjoyed using technology. Participants often described technology as being their first port of call when trying to problem solve an everyday issue. Thus, there are also potential educational benefits

to use technology as a learning tool. Previous survey data found that non-SEN adolescents frequently use the internet as an aid to complete homework (Frith, 2017). Similarly, in the current study, Luke-Sky, Ryan, and Lola described using their smartphones to problem solve or research helpful information. For adolescents with communication and interaction needs, who might not always attain feelings of competency in school settings, having an accessible tool which they feel helps them learn is likely to be important to them.

Technology also enables peer-to-peer learning or even group learning opportunities. In particular, Ryan's experiences of learning with his friends online reflected the hyper-natural monitoring hypothesis outlined by Veissière and Stendel (2018). The hypothesis suggests that by using smart phones and social media platforms, individuals are able to stay connected with others and this can contribute to collaborative learning online. One way it can do this is by allowing individuals to observe how another person carried out a particular task or learning activity. In Ryan's particular situation, this was viewed as a positive influence as he described situations of online learning with offline friends. In Ryan's case, he found this experience brought him humour and a sense of togetherness which his friends. The ability to see and hear friends in a synchronous manner is interpreted to contribute to a sense of social connectedness afforded by communication technologies. This finding is particularly relevant to the national Covid-19 lockdown context during which the data for this study was collected.

Other research by Hedges et al. (2018) suggests adolescents with ASC use technology to support organisation and planning in school and home settings. This was found to be supportive in a variety of ways such as increasing participant independence, reducing anxiety, and increasing social opportunities. The finding by

Hedges et al. (2018), along with what participants in this study said about technology being a valued tool for learning, suggests educational practitioners may benefit from learning how to integrate technology as a supportive tool for pupils with communication needs. This has implications for existing practice and policy in educational settings where smartphones are often banned on-site. The suggestion here is not that these devices should be allowed but that research findings indicate the need for better incorporation of technology to benefit pupils. This finding also has some implications for child development theories which do not yet consider the potential impacts of communication technologies on psychosocial outcomes. This is particularly the case when considering any positives of technology use compared to its harms. As described in Chapter 2, Johnson and Pupilampu (2008) proposed the ecological techno-subsystem as a refinement to Bronfenbrenner's (1994) theoretical organization of environmental influences on child development. The ecological techno-subsystem includes child interaction with both living (e.g., peers) and non-living (e.g., communication technologies) elements in immediate or direct environments (Johnson, 2010, p.176). Findings from the current study suggest that being connected nowadays means that one can skip the microsystem mediation and enter into new kinds of mediation with wider systems using technology. As mentioned above, participants in this study described sometimes asking the internet for help before they called a friend or parent. This is an example of the ecological techno-subsystem (Johnson & Pupilampu, 2008) being experienced by CYP.

5.5 Online implications of existing communication needs

Offline communication and interaction needs appear to relate online and this study adds to the understanding of how this is happening. Ryan's experience of having an unkind meme made about him (as described in Chapter 4) might help educators and

practitioners understand the intricacy of how new media can be misinterpreted by pupils with communication and interaction needs. Ryan was initially feeling hopeful and included when peers in his class shared the meme and described how he required help to understand that this instance of social interaction and communication was not a positive one and was at his expense. He described himself as being naïve and not understanding the real intentions behind the popularity of the meme. This type of experience is likely to have a negative impact on well-being, particularly if it were to be a frequent occurrence. Literature suggests that peer relationships during childhood are the foundation which help develop one's understanding of others' intentions. For those with communication and interaction needs who have difficulty interpreting others' social cues, behaviours, and emotions, formulating an understanding of others' intentions and social initiations is hypothesised to be particularly difficult (Kowalski & Fedina, 2011), which online interactions exacerbate.

Findings from this study implicate the importance of guidance and support for adolescents with communication and interaction needs in managing social challenges online. In the current study, without guidance Luke-Sky was not able to decipher why his primary school friends may not have been replying to his messages and so he kept attempting to initiate contact. This led to what Luke-Sky described as a cycle of fixation along with feelings of loneliness and rejection. Luke-Sky's account contributes to the existing understanding of online social challenges which might be experienced by adolescents with communication and interaction needs. There are implications for extending social skill interventions and teaching to include online social interactions and communication for some adolescents.

Interestingly, some participants who had a diagnosis of ASC sometimes related their experienced difficulties to their condition. In these cases, participants attempted to

decipher how their experiences might be linked to their individual strengths and needs and/ In this way, a diagnosis of ASC appeared to contribute to self-reflection and a need for understanding oneself. This was illustrated particularly well by Luke-Sky's self-reflection on how video calls might feel different for him because of his autism. He described how he feels some of his senses create more of a 'reality' for him than others and described how video calls are not the same as being able to 'feel' someone's presence. While limited social cues might be an issue for other users of technology, Luke-Sky tried to explain how his senses might work differently to others and how this might be why he feels a certain lack of comfortability when communicating via video calls.

With a range of new media now being used by adolescents online, educators and parents should consider which type of support is most useful for adolescents with communication and interaction needs. This is particularly important given the impact of the national COVID-19 lockdown and increased reliance on the use of video calls for education and employment purposes. Reading social situations now extends further than offline interactions and guidance is needed to support effective online interactions for all, but particularly those with communication and interaction needs.

5.5.1 Communication needs and victimisation online

Just as communication technologies facilitate positive interactions, they are also able to facilitate negative and harmful interactions and content. Of the 8 participants in this study, 4 had experienced cyberbullying in various forms as victims.

Staksrud et al. (2013) suggested that by simply going online, children aged 9 – 16 years old increased the risk of online harms substantially. The results from their survey data indicate children who used social networking sites were 114% more likely than those who didn't to have experienced cyberbullying. However, most large-scale data

on cyberbullying from within the UK does not differentiate between SEN and non-SEN users and the data is further skewed by different studies using different definitions of the term 'cyberbullying' (Espinoza & Wright, 2018).

Within the small-scale studies that have focused on cyberbullying amongst adolescents with SEN is that they are more vulnerable online than their non-SEN peers (El Asam & Katz, 2018). Focus group research by the Anti Bullying Alliance explored cyberbullying from the perspectives of children and adolescents with various types of SEN and disabilities in England (DfE & Anti Bullying Alliance, 2014). A key finding from the research was that adolescents felt the positive aspects of using the internet and social media are often overshadowed by talk of the internet being unsafe and online bullying. They felt there should be a balanced view with support to help them learn how to stay safe online and how to respond to online bullying if it happens rather than being discouraged from its use. This outlook was despite most participants in the study having experienced online bullying, which was often an extension of offline bullying. As well as this, participants in the research reported not feeling actively supported when trying to learn about online bullying or internet safety. This meant they were not aware of how to stay safe online or what to do about online bullying. In some cases, they felt their needs made it difficult for them to know if some of the things happening online were a form of bullying or not. Adolescent participants also reported being told the best strategy to deal with online bullying is to avoid the internet, which they felt was not a realistic option for them. The research findings of the study were used to create an online safety programme for children and adolescents with SEN to help them defend against cyberbullying (DfE & Anti Bullying Alliance, 2014). Unfortunately, the document is not readily accessible online and no such guidance is yet statutory for schools and educational settings to follow. At present, school settings

aim to prevent cyberbullying by teaching pupils how to identify and report cyberbullying as well as discouraging perpetration in the first place through behavioural policies. Schools' teaching content is mostly guided by both Ofsted and the DfE's 'Keeping Children Safe in Education' guidance (DfE, 2015) that require educational settings to deliver online safety education through an embedded and progressive curriculum. To further support this, the Department for Education recently published non-statutory guidance to support schools in teaching their pupils how to stay safe online through within new and existing school subjects (DfE, 2019). The UK Council for Internet Safety (UKCIS) also developed a framework that aims to support the development of online safety across the curriculum which describes the skills and understanding that CYP should have developed at different ages (UKCIS, 2020). However, despite the intention to prevent harm and teach children and adolescents digital skills, these documents are non-statutory and do not yet provide suggestions on how the needs of pupils with various types of SEN might be different to non-SEN peers.

The Children's commissioner research study (2018) on children and young adolescents found parents and schools had successfully engrained messages into children about online safety from known risks such as predators and strangers. Yet children were less aware about how to protect themselves from other online situations that could affect their mood and emotions. This has particular implications for pupils with communication and interaction needs who are at increased risk of online victimisation and associative mental health difficulties (DfE & Anti Bullying Alliance, 2014). By teaching universal messages against cyberbullying, it has been suggested that the needs of particularly susceptible or vulnerable individuals might be missed (Isbister, 2013; Katz, 2018). In particular, young people with communication

difficulties, who might find new media liberating, could be at a higher risk of experiencing online abuse (El Asam & Katz, 2018).

5.6 **Experiential learning and role of social support from school and home**

One of the most interesting and salient findings from the current study was the type of support participants said was most valuable to them in learning about online safety and in managing negative online experiences. Although participants viewed their digital lives as largely positive, the actual experiences were not always positive. In these situations, social support from family members (parents and elder siblings) was described to be valuable in effectively dealing with negative feelings and potential harm, particularly where these arose from experiences of cyberbullying or social misunderstanding. This type of support allowed participants to engage in learning processes and enhanced feelings of resilience and understanding.

This finding echoes the concepts which underpin the recent UK digital resilience framework and policy paper by the Digital Resilience Working Group and UK Council for Internet Safety (UKCIS, 2019). Resilience can be defined as 'a process to harness resources to sustain wellbeing' and digital resilience is the application of this concept to technology and the internet. Digital resilience helps individuals recognise and manage the risks they come across when socialising, exploring, or working online (UKCIS, 2019). According to this document, resilience is achieved primarily through experience rather than traditional teaching and learning processes. The framework by UKCIS (2019) suggests resilience can be fostered by opportunities to self-reflect upon experiences of online challenges with trusted people. Whilst the framework and tool are aimed at helping organisations and communities build digital resilience rather than children and adolescents, the concepts can be used by children and adolescents.

From an experiential perspective to teaching and learning, effective learning is gained when a person progresses through four particular stages:

- (1) having a concrete experience
- (2) observation of and reflection on that experience
- (3) the formation of abstract concepts (analysis) and generalizations (conclusions) from reflections
- (4) using those reflections to test a hypothesis in future situations and thereby creating new experiences (Kolb, 2014).

Such experiential learning cycles appear to have been applied by Ryan, Kel and Lola's experiences of cyberbullying since their parents and elder siblings played a key role in supporting stages two and three described above. Participants described how siblings had supported their learning through joint reflection and how conversations with parents had helped them understand something they did not before. This appeared to lead to increased feelings of resilience and better coping mechanisms if these situations were to arise again. The current study then adds to existing understanding of what helps adolescents with communication and interaction needs stay safe online and cope with negative experiences by suggesting that huge value is placed upon their own experiences. This finding also relates to the concept of 'active mediation' as described by Shin and Lwin (2017).

Recent UK data (Ofcom, 2020b) suggests most children feel safe online and know adults to speak to if they feel uncomfortable. To cope with negative online experiences, and in addition to speaking to an adult, adolescents use various strategies. This shows a high degree of resilience and knowledge in managing online risks (Ofcom, 2020b). Almost all participants in this study who described a negative online experience

followed this by a description of how they had managed and coped with the situation. This often reflected a sense of optimism and personal growth in terms of their digital lives which reinforces this study's findings that adolescents should engage in reflective processes.

In terms of support towards managing online harms, participants in this study felt as if their own experiences, albeit negative ones, were the real learning points for them. Whilst educators and educational settings are trying to protect and control what is experienced by adolescents by barring use of technology in schools or limiting use, maybe there is a better case for supervision rather than protection so support can be provided whilst CYP learn how to manage their digital lives effectively. This finding indicates the need for schools and families to provide reflective support and supervision as adolescents want to and can make competent online decisions for themselves. This suggestion is reflected in other UK data research (Children's Commissioner, 2018; Ofcom, 2020b).

However, research consistently shows that children and adolescents can also have self-contradictory ideas about how to stay safe online; for example, in previous studies, adolescents reported that it is risky to post images showing their school uniform on social media but then posted these images anyway (Children's Commissioner, 2018; Ofcom, 2020b). As Ofcom (2020b) uses tracking data as well as interviews (in a mixed-method research design) their findings are useful in highlight the sometimes-contradictory ideas held by children and adolescent. As an example of this, in the current study, Ava described an inappropriate interaction with a male she met online. Despite knowing the dangers of speaking to strangers online, Ava accepted this risk and appeared to justify how she does so safely.

Worryingly and in stark contrast to what the findings from the current study suggest would be helpful for adolescents with communication and interaction needs, leaders and political figures continue to believe that all current issues with children and adolescents (such as behaviour which is observed to be 'poor') can be resolved by banning phones from school altogether. Gavin Williamson, who serves as Secretary of State for Education in the UK, was recently quoted in a newspaper saying: "*[phones and screen time] acts as a breeding ground for cyber-bullying, and the inappropriate use of social media sites...I firmly believe that mobile phones should not be used or seen during the school day, and will be backing head teachers who implement such policies*" (Criddle, 2020). This view was tied with a need for 'discipline and order' in schools following the return from national lockdown due to COVID-19. Essentially, the technology and tools which were the only ways some children and adolescents communicated with peers and friends for many months should be now banned. Whilst it is not suggested here that schools categorically should or should not be allowing the use of phones throughout the school day, the implications from government statements seem to be avoiding challenges brought by social media and other communication technologies rather than strategically using quality research to guide effective curriculums and policies.

Findings from the current study suggest schools might do better engaging in experiential learning processes with their pupils. This would work well if pupils were allowed to bring screenshots of things which they had seen or engaged in online which might have upset them or they felt worried about. Peer-to-peer support, or even a mentoring scheme might work well in these situations, particularly in secondary schools. Another option for teachers would be to use scenarios or role-play to stimulate negative experiences in a controlled manner that would serve to benefit

children and adolescents without them having to have an actual painful experience. Interestingly, in the current study, Luke-Sky gave a detailed account of an assembly where scenarios were shown of a person pretending to be someone else online and the effects of this. He described learning from this experience and how it positively impacted the choices he made online.

5.6.1 RQ2: How do communication technologies support and facilitate the social lives of adolescents with communication and interaction needs?

5.7 Summary of themes from this research

The themes that emerged from this research suggest communication technologies can support and facilitate the social lives of children and adolescents with communication and interaction needs by providing novel opportunities for social connectivity and connectedness. Online forums might be able to provide increased social opportunities. In particular, real-time gaming appears to be a space and activity valued for its ability to provide social connectedness with others. However, risks and potential pitfalls of gaming in relation to adolescents with ASC were also apparent. Finally, particularly for adolescents with communication and interaction needs who might be experiencing traditionally marginalised social identities, the internet appears to be able to provide safe spaces for these individuals. This is also the case for unique interests which might not be shared by peers in school. In these cases, the internet can provide access to communities which might provide a sense of social and group acceptance not afforded elsewhere.

5.8 Novel social opportunities for connectedness

Psychologists suggest that all humans have a need to belong (Maslow, 1943 as cited in Abulof, 2017) and this need can be met through establishing and maintaining interpersonal relationships (Baumeister & Leary, 1995). Findings from the current study indicate technology is used as a tool to maintain contact and pursue a sense of

social connectedness with peers, extended online communities, and friends & family. Themes from this study suggest that if adolescents have existing friendships and social support then most of their online communication is likely to be an extension of those friendships. In this way, social needs can be met online through a range of platforms such as real-time gaming or video calls. Participants viewed the social connectedness they gained through online communication with offline friends and peers as a positive factor in their lives. It appears that, to an extent, social needs can be met online and this could contribute to feelings of social inclusion, emotional development, acceptance and friendships for adolescents with communication and interaction needs. This was demonstrated by Bobby and Lola describing two experiences where they provided and gained emotional support online to their friends by sharing empathy or gaining emotional validation. These themes from the dataset support the self-disclosure and stimulation hypothesis outlined by McKenna and Bargh (2000). These hypotheses describe how adolescents might develop existing friendships further by sharing their feelings on social media so that their friends can engage and respond. While that study focused on girls, this research showed that boys also engage in these types of supportive interactions.

Social competence does not develop in isolation and opportunities to interact and engage with friends and peers helps to develop these skills (Blatchford et al., 2015). As discussed in Chapter 2, Higley's research (2017) indicated that children and adolescents with SEN have fewer opportunities to socialise with peers inside and outside of school settings in comparison to non-SEN peers. Findings from the current study suggest that for those who use technology to socialise, future research into social opportunities outside of school should include digital interactions as an element which contributes to the social lives of adolescents with SEN. Even with adolescent

participants who did not have existing offline friendships, the motivation to socialise online was evident in the current study.

There appears to be a number of opportunities and benefits for adolescents with communication and interaction needs to make and develop relationships with others online, but also in feeling a sense of connectedness to communities which might have shared interests. This related to findings from the study by Meyer et al. (1998) explored in Chapter 2 in that technology might provide more social forums where adolescents with communication and interaction needs can just be the 'regular child', 'just another child' or even 'I'll help' online. Online, they might not always fall into particular social frames.

The features of social media and communication technologies that allow 'anonymity' have potential for identity construction, which might be particularly attractive to adolescents with communication and interaction needs who do not have strong offline friendships but are seeking connectedness (Bowker & Tuffin, 2000). Katz and El Asam (2019) suggest adolescents experiencing social isolation offline and who might have less developed social skills are unlikely to develop quality friendships online. Similarly, for those without existing offline friendships to maintain online, the internet might be a lonely place (Frith, 2017). If adolescents with needs are trying to engage with social technology while everyone else is only interested in engaging with their own social group, it could be adding another layer of deficit to the lack of social opportunities described above for pupils with communication and interaction needs. However, findings from the current study suggests that in some cases, with adult mediation and support, the internet may play a role in supporting those who might be experiencing challenges creating social connections (e.g., in Charlie's case).

Adolescents turn to online communication platforms to socialise to meet new friends but also stay connected to existing friends (Valkenburg et al., 2005). The Children's Commissioner report (2018) found social media was important to help maintain relationships, but this got trickier to manage at secondary school where friendships could break down online. Recommendations from the report suggested parents should be informed about the ways in which children's social media use changes with age, particularly on entry to secondary school, and to support children's use of social media in a positive way. In his interview Luke-Sky described difficulties during his transition between primary and secondary school. It's likely that there was a complex interplay between his communication and interaction needs related to ASC, and lack of offline friendships which might have contributed to his account of social rejection and loneliness online. Schools, educational settings and parents should consider the importance of online activity in transition plans between schools for pupils with communication and interaction needs. A particular focus should be on the online activity of adolescents with communication and interaction needs who do not have many strong offline friendships.

5.9 **A potentially safe space for marginalised identities**

As Charlie identifies as non-binary, their otherwise marginalised social identity had a chance to exist in a safe space with trusted adult mediation. Although Charlie found forming social relationships in school and within their local community difficult, the online friendships they formed appeared to meet their social needs to a level that suited them. This finding evolves the current literature which suggested children and adolescents do not tend to use social media to form new relationships but instead use them to maintain their already established relationships (Awan & Gauntlett, 2013). Whilst this study did not investigate the quality of online friendships or peer

interactions, it is worthwhile noting what participants said they gained from online social interactions with people they had not met offline. For Kel, Charlie, and Luke Sky, this was finding a sense of acceptance by seeing that lots of other people are interested in the same things as them. This appeared to be significant to them as their specific areas of were not shared by others in their mainstream school setting. This finding relates to those in a previous study by Singleton et al. (2016) in which adolescents with mental health difficulties described gaining feelings of validation and normalisation from social media connections with others. This was illustrated well by one participant in their study who described feelings of reassurance that social media gave them by knowing others out there are similar to them: *“it's like your eyes are opened because you notice that there's thousands all across the world in the same boat as you”* (Singleton et al., 2016, p. 400).

The findings from this study also tie in with earlier research that suggested adolescents who have limited offline social success appear to derive enhanced relationship satisfaction online, particularly if they find online communications more comfortable than offline social interaction. The social compensation hypothesis (McKenna et al., 2002) is that those who perceive their offline social networks to have undesirable characteristics seek to compensate by developing more extensive online social networks (Valkenburg et al., 2005; Valkenburg & Peters, 2007). Findings from the current study suggest that the internet may provide a levelling effect in relationship satisfaction for certain individuals as described in the social compensation hypothesis (McKenna et al., 2002). When considering the social lives of adolescents with communication and interaction needs it's important that their own need for relatedness is taken into account rather than what others perceive to be best for them. The concept of 'neurodiversity' (Singer, 1999) suggests that conditions such as ASC are not a

neurological deficit but part of the natural neurological variation. This ties in with the notion of 'neuroharmony' (Vermeulen, 2019), which asks how a neurodiverse society can increase the sense of autonomy, competence and relatedness of people with ASC so that they can contribute to society in ways which feel meaningful to them. This idea by Vermeulen (2019) could be applied to other types of SEN groups too.

Whilst previous research suggested adolescents may have better social relationships if they spend more time communicating online with existing offline friends than with strangers or acquaintances (Kuo et al., 2014), other literature (and the current study) suggests adolescents with ASC might be a unique subgroup who appear to 'socially compensate' through online interaction with peers and friends. Although most research in this area has focused on the role of associated anxiety in this process, some researchers suggest adolescents with autism find online communication compensates for a unique communicative style rather than for social anxiety (van Schalkwyk et al., 2017). Although the current study did not explore associated anxiety within the participant group, participants did describe benefits of online communication in relation to their personal views of their own strengths and needs. For example, when Lola described using 'Breathe' (an app that guides you through a series of deep breaths) she related this to stress management after the school day⁴. As another example, Bobby described using communication technology to afford himself additional 'thinking time' before responding to a message from someone.

5.10 **Gaming: potential and pitfalls**

In synchronous gaming gamers have the option to play with offline friends online (by searching their accounts by username) or have the computer set them up to play with

⁴ "I can get a bit stressed and I have to like, like a whole day at school can be hard so I have to like do one before I go to bed" [Lola]

strangers who are also online and playing at that time. An interesting finding from the current study was that the participants who enjoyed gaming were attracted to real-time gaming for social reasons, not just because they are 'addicted' to screen time as is suggested in previous studies on adolescents with ASC (MacMullin et al., 2016). Themes from the current study add to existing literature by exploring how, for some adolescents at least, gaming online with existing friends related to feelings of social connectedness.

Whereas previous research suggested that using the internet to primarily play games can hinder the quality of perceived friendships (Valkenburg & Peter, 2007; 2009), findings from the current study suggest that gaming is now social and synchronous and can provide stimulating social settings for some adolescents. Recent UK data suggests that 72% of 12 – 15-year-olds play games online, and this year more girls than ever before are taking part (Ofcom, 2020a). Particularly for adolescents with ASC, for whom gaming is often viewed from a harmful perspective, this study suggests that it might provide a structured activity with peers and friends which could provide feelings of connectedness. As there is a key role of games in social development for children and adolescents (Blatchford et al., 2015) online gaming can enable the development of relationships with peers and friends in a positive and accessible way.

However, it is true that for two participants in the current study, gaming either prompted anxiety responses or was used as a way to escape from negative feelings. Luke-Sky described the feelings of competency he got from reaching a new 'level' in a game and how it helped him manage emotions of sadness or loneliness. Luke-Sky's experience here really links in with the Children's Commissioner's finding that although parents and schools had successfully engrained messages in children and adolescents about online safety from known risks such as predators and strangers,

children are less aware of how to protect themselves from online situations that could affect their mood and emotions. Although technology use might be a short-term solution in some cases, this is unlikely to have positive long-term effects (Shankleman, 2020). Alongside this, Kel's account of experiencing panic attacks related to his gaming patterns also indicated how adolescents with communication and interaction needs are likely to benefit from additional support in their use of communication technologies.

5.11 **Strengths and limitations of this study**

By exploring the online experiences and views of adolescents with communication and interaction needs, this study provides insight into a relatively unexplored topic and participant group. Whilst a growing number of studies have started to consider the online socialisation experiences of adults with intellectual disabilities, there has been little focus on developing adolescents who might experience specific social challenges and be attending mainstream education settings. With legislative changes placing a greater onus on holistic planning by educators and professionals to meet the needs of children and adolescents with SEN, and with digital skills becoming essential in workplaces as well as community life, understanding how technology is being used and understood is essential.

A key strength of this study is that it privileges the participants' voices. In most studies regarding social media or technology, research is conducted by observing CYP rather than with them and this is particularly the case within the limited research studies on communication and interaction needs. The views of parents or teachers is also often engaged with rather than those of CYP themselves. As well as this, research into social media and potential negative outcomes of its use have dominated the scene. While valuable and important, the reality is that technology use is an integral part of

young people's everyday lives and using positive psychology approaches into what is helpful to young people can also limit harm. In this way, the data collected in this study mirrored the focus and utility of the study.

Furthermore, this study aimed to include individuals with SLCN who are often underrepresented within EP led research. Vivash et al. (2018) suggested that EPs are uniquely positioned to support schools in improving provision for children with SLCN, particularly through joint problem solving and resolving tensions which may exist between services.

The use of Yardley's principles of validity (Yardley, 2008) is also a strength of the current study. Sensitivity to context was ensured by the use of engagement processes which helped adolescent participants feel comfortable and safe, especially considering the national lockdown context during which data was collected. Using technology to communicate and sending information well before data collection allowed participants the time and space to consider if they truly wanted to take part.

This study also had limitations which should be noted in interpreting the findings. Firstly, the use of semi-structured interviews meant the data represents adolescents' perceptions and memories as they were willing to describe at the time and date of interview. The research design meant there was the possibility of distortions created by the participants' social understanding or willingness to share information (especially with regards to some of the difficulties that they may have experienced whilst using communication technologies). Previous research has suggested that children are under-reporting their social media use and any harmful content they see. For example, data shows that children self-report that they hardly use Instagram, but social media tracking shows that they often post content (Ofcom, 2020b). The reasons for this

difference in reporting and possible use are vast and suggests that mixed-method studies which utilise tracking as part of the methodology would be better.

Secondly, the data presented in this study was gathered during the first few months of the national lockdown due to COVID-19 in England. Thus, the context within which data was collected could have had an impact on views and feelings at the time. There was no option but to interact online and so perhaps this made it feel more valuable to the participants who may have downplayed their negative experiences. The situational context might have made the distinction between home and school experiences more distinct as very few children were socialising with school friends without concerted effort using technology during that time. Alongside this, research tools were selected that allowed virtual data collection. Whilst the validity of results in this study are not considered to be affected by the chosen research methods, it is possible that offline interviews could have yielded marginally different results.

Also, the findings of this study are not reliably transferable to CYP with other forms of SEN. It's possible that technology plays a different role for CYP with other types of SEN and further research is needed with these CYP. Similarly, this study did not include adolescents with higher levels of support needs (e.g., those with EHCPs). At the time of recruitment, online research with these CYP was deemed unsuitable by school leads and this raises the issue of research with more vulnerable groups in relation to technology use overall. It's likely that the participant group included in the study were more likely to be involved because they have less severe communication and interaction needs. It's important for those with higher levels of need to be included in research going forward (Livingstone & Helsper, 2007).

In contrast to existing literature on the social lives of adolescents with SEN (e.g., Higley, 2017) which suggest that CYP with SEN experience limited opportunities for socialising outside of school, the findings from this study suggest that adolescents now have the accessible option of socialising online, outside of school and from within school settings, in a world wide web. By using qualitative research design, this study was able to explore specific nuances of how and why socialising online might be deemed attractive by adolescents with communication needs.

Previous literature in this area have primarily focused on using quantitative measures to define severity of need and correlate this with online activity amongst adolescents with SEN (e.g., Katz & El Asam, 2019). In contrast to previous studies which have used large-scale quantitative designs, this study adds to existing literature by using qualitative design to explore the perspectives of young people themselves. Although generalisations for all adolescents with communication needs cannot be directly drawn from this research study, the premise of the research are applicable to various types of SEN amongst CYP. Where adolescents with communication and interaction needs might struggle to find peers in their immediate environment who they identify with, finding peers or community groups online could foster a positive sense of wellbeing and social acceptance.

Idiography aims to take information from particular groups of individuals and use it to make cautious generalisations only (Guest et al. 2012). Idiography is focused on the particular rather than making claims at the group or population level. This fits with the research design where the focus is on how a particular phenomenon is experienced by a particular group of individuals with particular needs (Willig, 2013). It is recognised that this is a small-scale study, carrying with it the usual important cautions related to representativeness and generalizability, this research study primarily aimed to inform

practice therefore whilst the findings are not generalisable, they are transferable to the world of education and EP practice.

5.11.1 Contextual account of pandemic and impact on research process

As this research took place at the start of the covid-19 it is accepted and acknowledged that results might have been biased towards positive framing of technology as, for most of us, this was the only way of staying connected to others. The pandemic directly influenced the research process as the research design was dependent on technology throughout. Whilst social connectedness and friendships were being discussed during interview, the researcher was reliant on technology to build rapport with CYP who participated in the study. This is likely to have led to some bias during interviews between researcher and participants.

In a study by Widnall et al., (2021), participants of an ongoing NIHR School for Public Health Research survey study were exploring social media use and adolescent mental health and wellbeing and had already completed a baseline survey pre-pandemic in October 2019. Later, participants were contacted by their schools in April/May 2020 during lockdown and invited to complete a similar survey online. A total of 1,047 Year 9 students (aged 13-14 years) in 17 schools completed this lockdown survey.

Students were asked if their reasons for using social media had changed during lockdown compared to a typical day pre-pandemic. Results indicate 50% girls reported increases in using social media for school work, due to having nothing better to do and to keep in touch with friends. Fewer boys reported increases in different social media activities compared to before the pandemic. The researchers hypothesised that the fact that many of the participants were able to stay in touch with friends and wider family via social media may help explain why their research study did not see an overall increase in poor mental health and wellbeing (Widnall et al., 2021). This study

findings links in with the current study as it further purports that social media might have been a more positive than usual experience during the pandemic than at other times.

In another research project which was led by two Educational Psychology services, 1758 children and young people completed an online questionnaire about their coronavirus experiences and what would help moving forward (Sivers et al., 2020). In both the secondary age questionnaires, participants were asked about the things that had helped them cope. Responses were gathered in the initial 3 months of the first national lockdown between May 2020 and July 2020. Based on responses, many of the children and young people shared that they had missed work and lessons in the school environment. However, this was largely due to the fact that these learning experiences were shared with others, with researchers noticing “a clear longing for connection and interaction” with 90% of 1758 pupils said the thing they missed most about school was their friends. There was a need for opportunities to reconnect with these relationships and that this was more important to the children than school work.

The most predominant theme within the results was ‘relationships and staying connected’ with family, friends, teachers and pets all being important to children and young people. Primary aged children who participated felt the same about relationships (Sivers et al., 2020). Again, the findings from this study links in with the current study as it further purports that social media might have been a more positive than usual experience during the pandemic than at other times.

5.12 **Summary of implications**

Implications related to CYP themselves (microsystem; Bronfenbrenner, 2005) include the importance of valuing and listening to the views and experiences of adolescents themselves when planning how best to support them. Adults should advocate for

adolescents, meaning represent their views in spaces where decisions are made about them (Michael & Frederickson, 2013). As well as this, adolescents should be listened to and offered mediation when issues arise so they can better explore and understand their experiences. It is worth considering that the adolescents spoken to within this study had received no formal support with regards to using technology, yet they presented as experienced, thoughtful and sensible technology users. Children and young people learn directly from their own personal experiences of using communication technologies (just as they will learn from their personal experiences in real-life). It will never be possible to completely eradicate all the risks associated with using technology and it is important that we value children's own capacity to manage the risks themselves.

School and home connections (mesosystem; Bronfenbrenner, 2005) play a key role in providing guidance to children and adolescents in using online platforms safely. Policy and government guidance (DfE, 2019; UKCIS, 2019) has stressed the importance of digital skills for future employment and workplaces and being able to use communication technologies with a full understanding of the possible benefits and risks should be standard for all CYP. As existing communication needs are likely to extend online in various ways, it's even more important for CYP with communication and interaction needs to receive individualised support in developing online (and offline) communication skills which would help them into adulthood.

Findings from this study suggest how valuable key safety messages and reflective conversations are to adolescents. Therefore, it's important that teachers and parents feel equipped to have conversations with their children and adolescents about how they socialise online. One manner of doing this could be the establishment of social and peer networks for parents, possibly facilitated by schools, which share information,

research, and trends in technology and advice. It's understandable that some parents prefer to have control and place lots of filters on online activity, but findings from this study suggest there appears to be a role for supervision of use rather than complete protection against use.

Within schools, teaching e-safety rules and messages appears to be working on the whole. Children and adolescents are taking away key principles and messages and can relay these to adults (Frith, 2017; Ofcom, 2020b). However, as adolescents push the boundaries of e-safety (e.g., talking to people they have not met offline) or experience negative things online, there is a need for schools to provide spaces for open dialogue, reflection, and supervision. One way of doing this could be through mentoring or peer-to-peer support which focuses on learning from experiences. In particular, experiential learning processes are particularly valued as was evident in this research. Participants in this study referred to elder siblings being particularly helpful to them. This suggests that in schools, elder year groups (e.g., Year 12 and 13) could mentor younger years (e.g., Year 7, 8 and 9) as they would be able to mentor from own experiences

Parents of CYP with communication and interaction needs should be at least signposted to support and guidance around how existing needs offline might impact online behaviour and experiences. There is a role for EPs to work with schools and parents in sharing this information as it is not readily available at the moment.

Wider implications (exosystem; Bronfenbrenner, 2005) from this study relate to policy makers and key stakeholders/leaders. The UN Convention on the Rights of The Child (1989) emphasises the right of a child_for freedom of expression though any medium of the child's choice (Art. 13), freedom of_association and peaceful assembly (Art.15)

as well as the right of leisure and play_opportunities (Art. 31). On the other hand, The Convention on the Rights of The Child also emphasizes the right to privacy (Art. 16) and protection from material injurious to the child's well-being (Art. 17). In other words, banning adolescents from using communication technologies impinges on their freedoms related to expression, association and leisure and play_opportunities. Yet giving adolescents a free reign on communication technology exposes them to risks related to privacy and material that could be potentially harmful to them. Given this position, an honest and pragmatic approach is needed. We need to help children and young people to maximise the opportunities provided by technology, while also minimizing their exposure to risks. Moreover, given the transient nature of communication technologies, the responsibility for safe and responsible technology use has to be collectively shared by all stakeholders. This includes online regulatory bodies, technology companies, adults involved in the care and education of children and young people and children and young people themselves.

5.13 **Key implications for EPs**

As Educational Psychologists, working as scientist practitioners, the EP role is to utilise knowledge of both psychology and child development in order to promote children's learning and general development (Fallon et al., 2010). This includes a high consideration to the multiple, interacting environmental systems, which influence children's development (Bronfenbrenner, 1979; 2005).

However, against a continually evolving EP context, combined with a backdrop of government cuts, EP services must reach more widely into the LA, developing commissions from key decision makers and stakeholders, working to apply and 'sell' psychology at all levels (Lee & Woods, 2017). The onus remains on both EP services and LAs to ensure that preventative work is ring-fenced, prioritised and accessible

across contexts. As well as this, being able to act as a “critical friend” who supports commissioners to develop their practice was becoming more difficult in the context of the “customer–provider” relationship (Lee & Woods,2017). This is a particularly pertinent point when considering research findings which suggest banning mobile devices in schools might not be beneficial in facilitating learning about technology; these are tricky conversations which not all educational practitioners will be ready for yet. In this context finding time, space and funding for new projects can be difficult. With technology use amongst CYP is only beginning to be discussed in key EP contexts and journals (and still in a limited manner), the researcher recognises the contemporary pressures on EPS’ which might impact the scope of implications described below.

Nonetheless, the ways in which EPs and EPS’ can support adolescents with SEN who use communication technologies fall broadly within the established framework of their core functions: training, consultation, assessment, intervention and research (Scottish Executive, 2002) and these are described below. The suggested ‘research’ is based on implications the researcher has drawn from these findings and implications.

Training

An EP could also work with groups of staff and parents to explain the balancing act that adolescents who have special needs are working on to enjoy the advantages and minimise the disadvantages of using communication technologies. This could be either through training or during a consultation. As well as this, based on researcher experience, if the EP is willing, schools are interested in learning more about recent research into the complex relationship between wellbeing of CYP and technology use. EPs are well places to disseminate research findings to schools via training which can help relay messages of a ‘digitally healthy’ lifestyle to CYP.

Consultation

EPs use of consultation as intervention could begin bringing adolescent's use of technology into the conversations about them. Consultation aims to reach an improved understanding amongst a range of stakeholders of a young person's strengths and difficulties, resulting in a set of agreed actions that leads to positive change and better outcomes (Nolan & Moreland, 2014). By interpreting behaviour as communication, an EP can hypothesise why a young person may be using technology in a problematic way but also advise on support systems as to how technology might be used as a tool for organisation, connection, and empowerment.

EPs could also continue to explore and emphasise the role communication technologies might be playing in child development (Johnson & Pupilampu, 2010). EPs could help bridge the understanding between children and adolescents and the systems that work to protect them. Such consultation led approaches would encourage a balanced and holistic exploration of the developmental consequences of communication technology use during childhood. In particular, EPs might begin to apply technology use by CYP to existing ecological subsystem theory (Bronfenbrenner, 1994). Alongside this, linking observed behaviour (e.g., screen time) to principles of SDT would be helpful in explaining what it is CYP feel they attain from time spent using communication technologies and EPs could bring conversations about this into their practice. EPs could specifically explore concepts of autonomy, competency and relatedness with schools and communities to better understand CYP. EPs can then facilitate conversations about how these needs might not be being met offline, or how they can be further met offline.

Assessment

EPs use a range of person-centred approaches and planning tools that should be used to include digital and online experiences. When thinking about social communication development and friendships, EPs might consider bringing online communications and connections into the picture - particularly for children in secondary schools. The CYP's motivation and engagement with technology as a learning tool, supplementing social opportunities, and peer/ friendship relationships could be considered and EPs might help develop a shared understanding between adolescents and their parents, carers, and schools.

Where technology might be having a perceived negative impact on observed behaviour or wellbeing, an EP could explore how a young person is making sense of their world with tools that apply personal construct psychology (Ravenette, 2002). By exploring what is important to a young person and understanding how they are behaving in order to have their needs met, an EP may be able to hypothesise why technology is playing a negative role in their life. The EP could then work with the key adults surrounding the young person (and the young person themselves) to enable them to have their needs met in healthier ways. As an example, instances where online time management is becoming an issue EPs could explore which types of activity the young person is engaging in and what value they feel this is providing them. As described above, EPs could use motivational theory, such as SDT, to consider what the young person might be compensating for online (e.g., relatedness, competency, autonomy).

Research

As described in Chapter 2, Finke et al. (2018) suggest their findings mean speech- and language professionals should consider how videogame play may be a useful

context for teaching new communication, social, and language skills. A strength of being positioned within Local Authorities is that it enables multi-agency, multi-disciplinary partnerships with other professions. Based on the initial study by Finke et al. (2018), it would appear there might be space for joint working on projects across a Local Authority on technology use and young people with SEN. Professionals could work together to further research in this area.

As well as this, a working party of EPs could be established to carry out research into the use of communication technology amongst CYP with SEN to share good practice and ideas on how to support families, adolescents, and school staff to partake in a balanced use of technology. This might be organised in an accessible manner using existing EP networks (e.g., EPNET). This working party could also run conferences for local schools to share their psychological insight into adolescents' reported use of social media and ways in which schools can support their students use the platforms in a balanced and positive way.

Intervention

The participants in this study described how communication technologies can provide social opportunities to engage with online communities, online peers and friends, and offline friends. They also described the difficulties they experienced and some participants related their experiences to ASC. An EP could work at a group level with adolescents who have communication needs to help them better understand concepts of online friendships and how to effectively manage negative online situations. Resources should be shared with school staff and parents on how to support adolescents with needs who might be regularly experiencing negative situations online. As EPs are evidence-informed practitioners, their role could be to help

communities navigate the existing literature so it is usable and practical for parents and schools to support adolescents.

Rainie and Anderson (2018) argued the need for digital media literacy programmes for children and adolescents. It was suggested that more education is needed for adolescents to understand the risks of online harms. An EP could work with researchers to help design and implement a digital media literacy programme to empower adolescents to make informed decisions on how they engage with technology. Importantly, they would need to help researchers understand how the programme might be adapted for pupils with communication and interaction needs and other forms of SEN. Technology is a part of everyday life and therefore an increase in education on how to effectively navigate it may help to reduce the risk of it having a negative effect on the mental wellbeing of its users. Similarly, within school settings, an EP should also consider how existing social communication interventions might begin to bring in online contexts into the conversation.

5.14 **Future Research**

Similar to previous studies in this area, it continues to appear that longitudinal research designs are needed in order to better assess the potential impact of technology use on children and adolescents over time. The correlational data does not yet answer causal hypothesis between screen time and mental health, for example. One of the key difficulties with the majority of evidence presented is that it approaches the subject from a 'digital immigrant' perspective (Prensky, 2001). Future methodologies which involve adolescents in the process of research would be a good idea. Also, data collection which includes the possibility of tracking specific technology use would also be best as it would not rely on the memories or self-reporting of participants.

Furthermore, this could be used to correlate with collected interview data which would allow exploration of related emotions, perceptions and reflections.

In addition to this, multi-perspective case study approaches with adolescents who have communication and interaction needs would be ideal. Data from a range of sources, such as parents, teachers, and adolescents would allow for triangulation of information. This type of data would perhaps have some impact on policy makers and those who contribute to national curriculums in the UK in making e-safety and digital skills a mandatory teaching requirement in schools.

In terms of areas of research, this study suggests that the role of mentors in supporting online safety and healthy digital use might be fruitful. Action research designs would be well suited to employ mentoring support programmes in schools and educational settings, which could help guide effective intervention development. EPs would be well placed to work with schools on carrying out such research.

Finally, an important limitation of this study was that no participant had an Education, Health and Care Plan at the time of data collection. Research with this group continues to be under-represented in research. The decision to not include those with greater needs in the study was made based on conversations with school staff and parents. At the time of data collection, some families were struggling to adjust to the national lockdown and this was a particularly challenging time for those within vulnerable groups. As such, the extent of need amongst the participants in this study was therefore not yet considered 'severe' and future studies should involve those with greater needs of SEN. However, participants in this study were receiving SEN support in school for communication and interaction needs and most had an official diagnosis of ASC or were waiting to be assessed for ASC. Although all participants in the study

were identified as needing additional support to meet communication and interaction needs, it is recognised that the sample was not entirely homogenous. Within SEN groups, presentation of needs is varied and so even two individuals with a diagnosis of ASC are likely to have huge variations. Future research focusing on CYP with communication and interaction needs should continue to use person-centred research tools to explore the strengths and needs of individuals to best guide provision and practice. As well as this, a positive psychology approach should be adopted more often in communication technology research with CYP with communication and interaction needs.

5.15 **Summary and Conclusions**

This study set out to explore the views and experiences of adolescents with communication and interaction needs in regards to their use of communication technologies. The findings suggest that adolescents with communication and interaction needs are able to access a range of social opportunities online and that social connectedness is a part of the motivation for using communication technology.

For adolescents who might have unique or focused interests, such as those with ASC, online networks and communities can provide at least some sense of social acceptance. This also applied to those experiencing marginalised identities within their offline settings or limited offline social interactions due to associative anxiety.

However, existing communication needs might present a specific vulnerability online in terms of difficulties with interpretations of new media and understanding others' intentions. In this way, offline needs might be translating online and this difficulty could expose adolescents to different types of cyberbullying and negative experiences. This has implications on mental health and well-being of pupils with special needs.

Despite this, the study's findings encourage a move away from viewing adolescents with needs as only vulnerable users of technology. Instead, there is a need to appreciate and give attention to both the vulnerabilities and advantages that adolescents experience. Findings from the current study call for broader thinking about how adolescents with communication and interaction needs manage themselves while facing such experiences and what types of support might help them in this process. The findings stress that if we are to effectively tackle online harms, such as cyberbullying, we must work alongside adolescents to learn from their own reflections of their experiences and what this means to them.

6 References

- Aarseth, E., Bean, A. M., Boonen, H., Colder Carras, M., Coulson, M., Das, D., Deleuze, J., Dunkels, E., Edman, J., Ferguson, C. J., Haagsma, M. C., Helmersson Bergmark, K., Hussain, Z., Jansz, J., Kardefelt-Winther, D., Kutner, L., Markey, P., Nielsen, R. K. L., Prause, N., ... Van Rooij, A. J. (2017). Scholars' open debate paper on the World Health Organization ICD-11 Gaming Disorder proposal. *Journal of Behavioral Addictions*, 6(3), 267–270. <https://doi.org/10.1556/2006.5.2016.088>
- Abulof, U. (2017). Introduction: Why We Need Maslow in the Twenty-First Century. *Society (New Brunswick)*, 54(6), 508–509. <https://doi.org/10.1007/s12115-017-0198-6>
- Ackers, M. J. (2012). Cyberbullying: Through the eyes of children and young people. *Educational Psychology in Practice*, 28(2), 141–157. <https://doi.org/10.1080/02667363.2012.665356>
- Alderson, P. and Morrow, V. (2004) *Ethics, Social Research and Consulting with Children and Young People*, London
- Allport, G. (1954). *The nature of prejudice*. Addison-Wesley.
- Antheunis, M. L., Schouten, A. P., & Kraemer, E. (2016). The Role of Social Networking Sites in Early Adolescents' Social Lives. *The Journal of Early Adolescence*, 36(3), 348–371. <https://doi.org/10.1177/0272431614564060>
- Avramidis, E. (2013). Self-concept, social position and social participation of pupils with SEN in mainstream primary schools. *Research Papers in Education*, 28(4), 421–442. <https://doi.org/10.1080/02671522.2012.673006>

- Awan, F., & Gauntlett, D. (2013). Young People's Uses and Understandings of Online Social Networks in Their Everyday Lives. *YOUNG*, 21(2), 111–132.
<https://doi.org/10.1177/1103308813477463>
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529. <https://doi.org/10.1037/0033-2909.117.3.497>
- Benford, P., & Standen, P. (2009). The internet: A comfortable communication medium for people with Asperger syndrome (AS) and high functioning autism (HFA)? *Journal of Assistive Technologies*, 3(2), 44–53. <https://doi.org/10.1108/17549450200900015>
- Berndt, T. J., & Keefe, K. (1995). Friends' influence of adolescents' adjustment to school. *Child Development*, 66(5), 1312-. <https://doi.org/10.2307/1131649>
- Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. *Children and Youth Services Review*, 41, 27–36. <https://doi.org/10.1016/j.childyouth.2014.03.001>
- Blais, J. J., Craig, W. M., Pepler, D., & Connolly, J. (2008). Adolescents Online: The Importance of Internet Activity Choices to Salient Relationships. *Journal of Youth and Adolescence*, 37(5), 522–536. <https://doi.org/10.1007/s10964-007-9262-7>
- Blatchford, P., Webster, R., & Russell, A. (2012). Challenging the Role and Deployment of Teaching Assistants in Mainstream Schools: The Impact on Schools: Final Report on the Effective Deployment of Teaching Assistants (EDTA) project. In *UCL Institute of Education: London, UK*. [Report]. UCL Institute of Education.
<https://www.ucl.ac.uk/ioe/>

- Blatchford, P. (2014). *Support staff: The role and effective deployment of teaching assistants in schools in England and Wales [IOE Research Briefing N°88]* [Other]. Institute of Education, University of London, London. (2014); Institute of Education, University of London. <https://discovery.ucl.ac.uk/id/eprint/10018743/>
- Blatchford, P., Baines, E., & Pellegrini, A. D. (2015). *The child at school: Interactions with peers and teachers* ([Second edition].). Routledge.
- Bakopoulou, I., & Dockrell, J. E. (2016). The role of social cognition and prosocial behaviour in relation to the socio-emotional functioning of primary aged children with specific language impairment. *Research in Developmental Disabilities, 49–50*, 354–370. <https://doi.org/10.1016/j.ridd.2015.12.013>
- Bowker, N., & Tuffin, K. (2002). Disability Discourses for Online Identities. *Disability & Society, 17*(3), 327–344. <https://doi.org/10.1080/09687590220139883>
- Boyd, D. M. (2014). *It's complicated: The social lives of networked teens*. Yale University Press.
- Boyd, D. M., & Ellison, N. B. (2008). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210–230. <https://doi.org/10.1111/j.1083-6101.2007.00393.x>
- BPS. (2017). *Professional practice guidelines. Division of Educational and Child Psychology*. London: BPS.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE.

- Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *International encyclopedia of education* (2nd ed., Vol. 3, pp. 1643–1647) Oxford: Elsevier.
- Burke, M., Kraut, R., & Williams, D. (2010). Social use of computer-mediated communication by adults on the autism spectrum. *Proceedings of the 2010 ACM Conference on Computer Supported Cooperative Work*, 425–434.
<https://doi.org/10.1145/1718918.1718991>
- Burr, V. (2003). *Social Constructionism*. Routledge. Cameron, C. (2018) Changing fortunes? Aspiration and realization for looked after young people's post-compulsory educational pathways in England. *Journal of Longitudinal and Lifecourse Studies*, 9, 1, 101-114
- Burr, V. (2015). *Social constructionism* (Third edition.). Routledge.
<https://bibliu.com/users/saml/samlUCL?RelayState=eyJjdXN0b21fbGF1bmNoX3VybCl6liMvdmllldy9ib29rcy85NzqxMzE3NTAzOTU4L2VwdWlvT1BTL3hodG1sLzA2X0NvbnRlbnRzLmh0bWwifQ%3D%3D>
- Cage, E., Di Monaco, J., & Newell, V. (2018). Experiences of Autism Acceptance and Mental Health in Autistic Adults. *Journal of Autism and Developmental Disorders*, 48(2), 473–484. <https://doi.org/10.1007/s10803-017-3342-7>
- Cassidy, J., & Asher, S. R. (1992). Loneliness and Peer Relations in Young Children. *Child Development*, 63(2), 350–365. <https://doi.org/10.1111/j.1467-8624.1992.tb01632.x>
- Caton, S., & Chapman, M. (2016). The use of social media and people with intellectual disability: A systematic review and thematic analysis. *Journal of Intellectual and*

Developmental Disability, 41(2), 125–139.

<https://doi.org/10.3109/13668250.2016.1153052>

Children's Commissioner. (2018). *Life in 'likes': Children's Commissioner report into social media use among 8–12-year-olds*.

<https://www.childrenscommissioner.gov.uk/wp-content/uploads/2018/01/Childrens-Commissioner-for-England-Life-in-Likes.pdf>

Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior*, 55, 190–197.

<https://doi.org/10.1016/j.chb.2015.09.011>

Criddle, C. (2021, April 7). Mobile phones should be banned in schools—Gavin

Williamson. *BBC News*. <https://www.bbc.com/news/technology-56663010>

Cummings, J., Butler, B., & Kraut, R. (2002). The quality of online social relationships.

Communications of the ACM, 45(7), 103–108.

<https://doi.org/10.1145/514236.514242>

Cypress, B. S. (2017). Rigor or reliability and validity in qualitative research:

Perspectives, strategies, reconceptualization, and recommendations. *Dimensions of Critical Care Nursing*, 36(4), 253–263.

<https://doi.org/10.1097/DCC.0000000000000253>

Davis, K. (2012). Friendship 2.0: Adolescents' experiences of belonging and self-

disclosure online. *Journal of Adolescence (London, England.)*, 35(6), 1527–1536.

<https://doi.org/10.1016/j.adolescence.2012.02.013>

Deci, E. L., & Ryan, R. M. (2000). The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, 11(4), 227–268.

https://doi.org/10.1207/S15327965PLI1104_01

Del-Manso, H., Alexandra, B., Hughes, T., Findlater, D., & Findlater, J. (2011). *Children with special educational needs – internet safety concerns* (Research Highlights for Children's Online Safety No. 20). UKCIS (UK Council for Child Internet Safety and The Lucy Faithfull Foundation).

<https://d1afx9quaogywf.cloudfront.net/sites/default/files/Research%20Highlights/UKCCIS%20RH%2020%20SEN%20Children.pdf>

Department for Education and Skills. (2001). *Inclusive schooling: Children with special educational needs / Department for Education and Skills*. Department for Education and Skills.

Department for Education & Department of Health. (2014). *Special educational needs and disability code of practice: 0 to 25 years: statutory guidance for organisations who work with and support children and young people with special educational needs and disabilities*. Department for Education and Department of Health.

Department for Education and Anti-Bullying Alliance. (2014). *Cyberbullying and children and young people with SEN and disabilities: The views of young people*. National Children's Bureau. <https://www.anti-bullyingalliance.org.uk/sites/default/files/field/attachment/disabled-young-peoples-views-on-cyberbullying-report.pdf>

Department for Education (DfE). (2015). Keeping children safe in education.

<https://www.gov.uk/government/publications/keeping-children-safe-in-education--2>

- Department for Education. (2019). *Teaching online safety in schools*. GOV.UK.
<https://www.gov.uk/government/publications/teaching-online-safety-in-schools>
- Department for Education. (2020). *Special educational needs in England: 2019/20*.
<https://explore-education-statistics.service.gov.uk/find-statistics/special-educational-needs-in-england/2019-20#dataDownloads-1>
- Desjarlais, M., & Willoughby, T. (2010). A longitudinal study of the relation between adolescent boys and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis? *Computers in Human Behavior*, 26(5), 896–905. <https://doi.org/10.1016/j.chb.2010.02.004>
- Dijck, J. van. (2013). *The culture of connectivity: A critical history of social media*. Oxford University Press. <http://dx.doi.org/10.1093/acprof:oso/9780199970773.001.0001>
- Dunn, J. (2004). *Children's friendships: The beginnings of intimacy*. Blackwell.
- Durkin, K., Boyle, J., Hunter, S., & Conti-Ramsden, G. (2013). Video Games for Children and Adolescents with Special Educational Needs. *Zeitschrift Für Psychologie*, 221(2), 79–89. <https://doi.org/10.1027/2151-2604/a000138>
- El Asam, A., & Katz, A. (2018). Vulnerable Young People and Their Experience of Online Risks. *Human-Computer Interaction*, 33(4), 281–304.
<https://doi.org/10.1080/07370024.2018.1437544>
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook “Friends:” Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.
<https://doi.org/10.1111/j.1083-6101.2007.00367.x>
- Erikson, E. (1968). *Identity, youth and crisis*. Faber & Faber.

- Espinoza, G., & Wright, M. (2018). Cyberbullying Experiences Among Marginalized Youth: What Do We Know and Where Do We Go Next? *Journal of Child & Adolescent Trauma*, 11(1), 1–5. <https://doi.org/10.1007/s40653-018-0207-y>
- Etherington, R. K. (2004). *Becoming a reflexive researcher: Using our selves in research*. Jessica Kingsley. <https://research-information.bris.ac.uk/en/publications/becoming-a-reflexive-researcher-using-our-selves-in-research>
- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods*, 5(1), 80–92. <https://doi.org/10.1177/160940690600500107>
- Finke, E. H., Hickerson, B. D., & Kremkow, J. M. D. (2018). “To be quite honest, if it wasn’t for videogames, I wouldn’t have a social life at all”: Motivations of young adults with autism spectrum disorder for playing videogames as leisure. *American Journal of Speech-Language Pathology*, 27(2), 672–689. https://doi.org/10.1044/2017_AJSLP-17-0073
- Finlay, L., & Gough, B. (2008). *Reflexivity: A Practical Guide for Researchers in Health and Social Sciences* (1st ed.). Wiley-Blackwell. <https://doi.org/10.1002/9780470776094>
- Fisher, M. H., & Taylor, J. L. (2016). Let’s talk about it: Peer victimization experiences as reported by adolescents with autism spectrum disorder. *Autism*, 20(4), 402–411. <https://doi.org/10.1177/1362361315585948>
- Frable, D. E. S. (1993). Being and Feeling Unique: Statistical Deviance and Psychological Marginality. *Journal of Personality*, 61(1), 85–110. <https://doi.org/10.1111/j.1467-6494.1993.tb00280.x>

- Frith, E. (2017). *Social media and children's mental health: A review of the evidence*. Education Policy Institute. http://dera.ioe.ac.uk/29528/1/Social-Media_Mental-Health_EPI-Report.pdf
- Fullerton, A., & Coyne, P. (1999). Developing Skills and Concepts for Self-Determination in Young Adults with Autism. *Focus on Autism and Other Developmental Disabilities*, 14(1), 42–52. <https://doi.org/10.1177/108835769901400106>
- Gentile, B., Twenge, J. M., Freeman, E. C., & Campbell, W. K. (2012). The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behavior*, 28(5), 1929–1933. <https://doi.org/10.1016/j.chb.2012.05.012>
- Gillham, B. (2005). *Research Interviewing: The range of techniques: A practical guide*. McGraw-Hill Education (UK).
- Gillespie-Lynch, K., Kapp, S. K., Shane-Simpson, C., Smith, D. S., & Hutman, T. (2014). Intersections between the autism spectrum and the internet: Perceived benefits and preferred functions of computer-mediated communication. *Intellectual and Developmental Disabilities*, 52(6), 456–469. <https://doi.org/10.1352/1934-9556-52.6.456>
- Gonzales, A. L., & Hancock, J. T. (2011). Mirror, Mirror on my Facebook Wall: Effects of Exposure to Facebook on Self-Esteem. *Cyberpsychology, Behavior and Social Networking*, 14(1–2), 79–83. <https://doi.org/10.1089/cyber.2009.0411>
- Green, F. P., & Schleien, S. J. (1991). Understanding Friendship and Recreation: A Theoretical Sampling. *Therapeutic Recreation Journal*, 25(4), Article 4. <https://js.sagamorepub.com/trj/article/view/4579>

- Greenhow, C., & Burton, L. (2011). Help from My “Friends”: Social Capital in the Social Network Sites of Low-Income Students. *Journal of Educational Computing Research*, 45(2), 223–245. <https://doi.org/10.2190/EC.45.2.f>
- Greenhow, C., & Lewin, C. (2016). Social media and education: Reconceptualizing the boundaries of formal and informal learning. *Learning, Media and Technology*, 41(1), 6–30. <https://doi.org/10.1080/17439884.2015.1064954>
- Griffiths, M. D. (2014). Online Games, Addiction and Overuse of. In *The International Encyclopedia of Digital Communication and Society* (pp. 1–6). American Cancer Society. <https://doi.org/10.1002/9781118767771.wbiedcs044>
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology*, 25(6), 633–649. <https://doi.org/10.1016/j.appdev.2004.09.005>
- Grynszpan, O., Weiss, P. L. T., Perez-Diaz, F., & Gal, E. (2014). Innovative technology-based interventions for autism spectrum disorders: A meta-analysis. *Autism: The International Journal of Research and Practice*, 18(4), 346–361. <https://doi.org/10.1177/1362361313476767>
- Hartup, W. W. (1996). The Company They Keep: Friendships and Their Developmental Significance. *Child Development*, 67(1), 1–13. <https://doi.org/10.1111/j.1467-8624.1996.tb01714.x>
- HCPC. (2015). *Standards of proficiency: Practitioner psychologists*. London: HCPC.
- Hedges, S. H., Odom, S. L., Hume, K., & Sam, A. (2018). Technology use as a support tool by secondary students with autism. *Autism: The International Journal of Research and Practice*, 22(1), 70–79. <https://doi.org/10.1177/1362361317717976>

- Higley, S. E. (2017). *The social lives and friendships of children with special educational needs outside of school: Parent perspectives*. UCL University College London.
- Holmes, K. M., & O'Loughlin, N. (2014). The experiences of people with learning disabilities on social networking sites. *British Journal of Learning Disabilities*, 42(1), 1–5. <https://doi.org/10.1111/bld.12001>
- Howitt, D. (2010). *Introduction to qualitative methods in psychology*. Harlow: Prentice Hall.
- Humphrey, N., & Lewis, S. (2008). What does 'inclusion' mean for pupils on the autistic spectrum in mainstream secondary schools? *Journal of Research in Special Educational Needs*, 8(3), 132–140. <https://doi.org/10.1111/j.1471-3802.2008.00115.x>
- Isbister, J. (2013). *Exploring adolescents' use of social networking sites and their perceptions of how this can influence their peer relationships* [ProQuest Dissertations Publishing]. <http://search.proquest.com/docview/2117863762/?pq-origsite=primo>
- Johnson, G. M. (2010). Internet Use and Child Development: Validation of the Ecological Techno-Subsystem. *Educational Technology & Society*, 13(1), 176–185.
- Johnson, G., & Pupilampu, K. (2008). A conceptual framework for understanding the effect of the Internet on child development: The ecological techno-subsystem. *Canadian Journal of Learning and Technology*, 34, 19–28.
- Juvonen, J., & Gross, E. F. (2008). Extending the School Grounds? Bullying Experiences in Cyberspace. *Journal of School Health*, 78(9), 496–505. <https://doi.org/10.1111/j.1746-1561.2008.00335.x>

Katz, A., & El Asam, Dr. A. (2019). *Vulnerable Children in a Digital World* (Youthworks Consulting, p. 44).

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, 25(1), 79–93.
<https://doi.org/10.1080/02673843.2019.1590851>

Kolb, D. (2014). *Experiential Learning: Experience as the Source of Learning and Development* (2nd edition). PH Professional Business.
<https://go.oreilly.com/university-college-london/library/view/-/9780133892512/?ar>

ki, R. M., & Fedina, C. (2011). Cyber bullying in ADHD and Asperger Syndrome populations. *Research in Autism Spectrum Disorders*, 5(3), 1201–1208.
<https://doi.org/10.1016/j.rasd.2011.01.007>

Kowalski, R. M., & Limber, S. P. (2013). Psychological, Physical, and Academic Correlates of Cyberbullying and Traditional Bullying. *Journal of Adolescent Health*, 53(1), S13–S20. <https://doi.org/10.1016/j.jadohealth.2012.09.018>

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet Paradox: A Social Technology That Reduces Social Involvement and Psychological Well-Being? *The American Psychologist*, 53(9), 1017–1031.
<https://doi.org/10.1037/0003-066X.53.9.1017>

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., Shablack, H., Jonides, J., & Ybarra, O. (2013). Facebook Use Predicts Declines in Subjective Well-Being in Young Adults. *PloS One*, 8(8), 391–392.
<https://doi.org/10.1371/journal.pone.0069841>

- Kuo, M. H., Orsmond, G. I., Coster, W. J., & Cohn, E. S. (2014). Media use among adolescents with autism spectrum disorder. *Autism: The International Journal of Research and Practice*, 18(8), 914–923. <https://doi.org/10.1177/1362361313497832>
- Ladd, G. W. (1999). Peer relationships and social competence during early and middle childhood. *Annual Review of Psychology*, 50(1), 333–359. <https://doi.org/10.1146/annurev.psych.50.1.333>
- Lapan, S., Marylynn Quartaroli, & Frances Riemer. (2011). *Qualitative Research: An Introduction to Methods and Designs* (1st edition). Jossey-Bass. <https://go.oreilly.com/university-college-london/library/view/-/9781118118832/?ar>
- Laugeson, E. A., & Ellingsen, R. (2014). Social skills training for adolescents and adults with autism spectrum disorder. In *Adolescents and adults with autism spectrum disorders* (pp. 61–85). Springer Science + Business Media. https://doi.org/10.1007/978-1-4939-0506-5_4
- Lease, A. M., Musgrove, K. T., & Axelrod, J. L. (2002). Dimensions of Social Status in Preadolescent Peer Groups: Likability, Perceived Popularity, and Social Dominance. *Social Development (Oxford, England)*, 11(4), 508–533. <https://doi.org/10.1111/1467-9507.00213>
- Lee, S. J. (2009). Online Communication and Adolescent Social Ties: Who benefits more from Internet use? *. *Journal of Computer-Mediated Communication*, 14(3), 509–531. <https://doi.org/10.1111/j.1083-6101.2009.01451.x>
- Lee, W. (2013). *A Generation Adrift*. The Communication Trust. https://www.thecommunicationtrust.org.uk/media/31961/tct_genadrift.pdf

- Lin, J.-H. (2016). Need for relatedness: A self-determination approach to examining attachment styles, Facebook use, and psychological well-being. *Asian Journal of Communication*, 26(2), 153–173. <https://doi.org/10.1080/01292986.2015.1126749>
- Livingstone, P. S., Davidson, P. J., Bryce, D. J., Batool, W. S., Haughton, C., & Nandi, A. (2017). *Children's online activities, risks and safety*. 110.
- Livingstone, S., Davidson, J., & Bryce, J. (2017). *Children's online activities, risks and safety: A literature review by the UKCCIS Evidence Group*. UK Council for Internet Safety. <https://www.gov.uk/government/publications/childrens-online-activities-risks-and-safety-a-literature-review-by-the-ukccis-evidence-group>
- Livingstone, S., Haddon, L., & Görzig, A. (2012). *Children, risk and safety on the internet: Research and policy challenges in comparative perspective*. Policy Press, The Policy Press. <https://doi.org/10.1332/policypress/9781847428837.001.0001>
- Livingstone, S., & Helsper, E. (2007). Gradations in digital inclusion: Children, young people and the digital divide. *New Media and Society*, 9(4), 671–696. <https://doi.org/10.1177/1461444807080335>
- Livingstone, S., & Palmer, T. (2012). *Identifying vulnerable children online and what strategies can help them* [Monograph]. UK Safer Internet Centre. <http://www.saferinternet.org.uk/>
- Loukusa, S., Mäkinen, L., Kuusikko-Gauffin, S., Ebeling, H., & Moilanen, I. (2014). Theory of mind and emotion recognition skills in children with specific language impairment, autism spectrum disorder and typical development: Group differences and connection to knowledge of grammatical morphology, word-finding abilities and verbal working memory. *International Journal of Language & Communication Disorders*, 49(4), 498–507. <https://doi.org/10.1111/1460-6984.12091>

- MacMullin, J. A., Lunskey, Y., & Weiss, J. A. (2016). Plugged in: Electronics use in youth and young adults with autism spectrum disorder. *Autism, 20*(1), 45–54.
<https://doi.org/10.1177/1362361314566047>
- Massier, L. A. (2017). *Computer-Mediated Communication Usage and Perceptions amongst Young Adults with Autism Spectrum Disorder* [ProQuest Dissertations Publishing]. <https://search.proquest.com/docview/1927182590?pq-origsite=primo>
- Matheson, C., Olsen, R. J., & Weisner, T. (2007). A good friend is hard to find: Friendship among adolescents with disabilities. *American Journal of Mental Retardation, 112*(5), 319–329. [https://doi.org/10.1352/0895-8017\(2007\)112\[0319:AGFIHT\]2.0.CO;2](https://doi.org/10.1352/0895-8017(2007)112[0319:AGFIHT]2.0.CO;2)
- Mazurek, M. O., Shattuck, P. T., Wagner, M., & Cooper, B. P. (2012). Prevalence and Correlates of Screen-Based Media Use Among Youths with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders, 42*(8), 1757–1767.
<https://doi.org/10.1007/s10803-011-1413-8>
- Mazurek, M. O., & Wenstrup, C. (2013). Television, Video Game and Social Media Use Among Children with ASD and Typically Developing Siblings. *Journal of Autism and Developmental Disorders, 43*(6), 1258–1271. <https://doi.org/10.1007/s10803-012-1659-9>
- McClimens, A., & Gordon, F. (2008). Presentation of Self in E-everyday Life: How People Labelled with Intellectual Disability Manage Identity as They Engage the Blogosphere. *Sociological Research Online, 13*(4), 1–13.
<https://doi.org/10.5153/sro.1774>
- McKenna, K. Y. A., & Bargh, J. A. (2000). Plan 9 From Cyberspace: The Implications of the Internet for Personality and Social Psychology. *Personality and Social Psychology Review, 4*(1), 57–75. https://doi.org/10.1207/S15327957PSPR0401_6

- McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship Formation on the Internet: What's the Big Attraction? *Journal of Social Issues*, 58(1), 9–31.
<https://doi.org/10.1111/1540-4560.00246>
- Meerkerk, G.-J., Van Den Eijnden, R. J. J. M., Vermulst, A. A., & Garretsen, H. F. L. (2009). The Compulsive Internet Use Scale (CIUS): Some psychometric properties. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, 12(1), 1–6. <https://doi.org/10.1089/cpb.2008.0181>
- Meeus, A., Beullens, K., & Eggermont, S. (2019). Like me (please?): Connecting online self-presentation to pre- and early adolescents' self-esteem. *New Media & Society*, 21(11–12), 2386–2403. <https://doi.org/10.1177/1461444819847447>
- Meyer, L. (2001). The Impact of Inclusion on Children's Lives: Multiple outcomes, and friendship in particular. *International Journal of Disability Development and Education - INT J DISABIL DEV EDUC*, 48, 9–31.
<https://doi.org/10.1080/10349120120036288>
- Meyer, L. H., Minondo, S., Fisher, M., Larson, M. J., Dunmore, S., Black, J. W., & D'Aquanni, M. (1998) Frames of friendship: social relationships among adolescents with diverse abilities. In Meyer, L. H., Park, H. S., Grenot-Scheyer, M., Schwartz I. S. & Harry, B. (Eds.), *Making friends: The influences of culture and development*. (p.189 - 221) Baltimore, Brookes.
- Morris, S. (2019). *Autistic Adolescents' Use of social media*. <https://blogs.ucl.ac.uk/grand-challenges/2019/01/09/autistic-adolescents-use-of-social-media/>
- Ofcom (a). (2020). *Children and parents: Media use and attitudes report 2019* (p. 36).
https://www.ofcom.org.uk/_data/assets/pdf_file/0023/190616/children-media-use-attitudes-2019-report.pdf

Ofcom (b). (2020). *Children's Media Lives – Wave 6* (p. 62).

<https://www.ofcom.org.uk/research-and-data/media-literacy-research/childrens/childrens-media-lives>

O'Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics*, *127*(4), 800–804.

<https://doi.org/10.1542/peds.2011-0054>

Peng, W., Lin, J.-H., Pfeiffer, K. A., & Winn, B. (2012). Need Satisfaction Supportive Game Features as Motivational Determinants: An Experimental Study of a Self-Determination Theory Guided Exergame. *Media Psychology*, *15*(2), 175–196.

<https://doi.org/10.1080/15213269.2012.673850>

Pinto, C., Baines, E. M., & Bakopolou, I. (2019). The peer relations of pupils with special educational needs in mainstream primary schools: The importance of meaningful contact and interaction with peers. *British Journal of Educational Psychology*, *89* (4) Pp. 818-837. (2019).

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. *On the Horizon*, *9* (5), 1–6.

<https://doi.org/10.1108/10748120110424816>

Primack, B. A., Shensa, A., Escobar-Viera, C. G., Barrett, E. L., Sidani, J. E., Colditz, J. B., & James, A. E. (2017). Use of multiple social media platforms and symptoms of depression and anxiety: A nationally-representative study among U.S. young adults. *Computers in Human Behavior*, *69*, 1–9. <https://doi.org/10.1016/j.chb.2016.11.013>

Rainie, L., & Anderson, J. (2018). The Future of Wellbeing in a Tech-Saturated World.

Retrieved from <https://www.pewresearch.org/internet/2018/04/17/the-future-of-well-being-in-a-tech-saturated-world/>

- Regmi, P. R., Waithaka, E., Paudyal, A., Simkhada, P., & van Teijlingen, E. (2016). Guide to the design and application of online questionnaire surveys. *Nepal journal of epidemiology*, 6(4), 640–644. <https://doi.org/10.3126/nje.v6i4.17258>
- Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and Hanging Out Face-to-Face: Overlap in Adolescents' Online and Offline Social Networks. *Developmental Psychology*, 48(2), 356–368. <https://doi.org/10.1037/a0026980>
- Reinecke, L., Vorderer, P., & Knop, K. (2014). Entertainment 2.0? The Role of Intrinsic and Extrinsic Need Satisfaction for the Enjoyment of Facebook Use. *Journal of Communication*, 64(3), 417–438. <https://doi.org/10.1111/jcom.12099>
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily Well-Being: The Role of Autonomy, Competence, and Relatedness. *Personality & Social Psychology Bulletin*, 26(4), 419–435. <https://doi.org/10.1177/0146167200266002>
- Robinson, O. C. (2014). Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative Research in Psychology*, 11(1), 25–41. <https://doi.org/10.1080/14780887.2013.801543>
- Robson, C. (2016). *Real world research: A resource for users of social research methods in applied settings*. (Fourth edition / Colin Robson & Kieran McCartan.). John Wiley & Sons Ltd. <https://bibliu.com/users/saml/samlUCL?RelayState=eyJjdXN0b21fbGF1bmNoX3VybCI6liMvdmlldy9ib29rcy85NzgxMTE5MDgzNDEyL3BkZjJodG1sZXgvaW5kZXguaHRtbCJ9>
- Roffey, S. (2015). Becoming an agent of change for school and student well-being. *Educational and Child Psychology*, 32, 21–30.

- Rubin, K. H., Bukowski, W. & Parker, J. (2006) Peer Interactions, Relationships & Groups, in Rubin, K. H., Bukowski, W. & Laursen, B. (2006) *Handbook of Peer Interactions, Relationships and Groups*. Guilford Press, UK.
- Salmons, J. (2010). *Online interviews in real time*. SAGE.
- Salmons, J. (2012). *Cases in Online Interview Research*. SAGE Publications, Inc.
<https://doi.org/10.4135/9781506335155>
- Schmitt, K., Dayanim, S., & Matthias, S. (2008). Personal Homepage Construction as an Expression of Social Development. *Developmental Psychology*, 44, 496–506.
<https://doi.org/10.1037/0012-1649.44.2.496>
- Scottish Executive (2002). Review of Educational Psychology Services in Scotland. Scottish Executive Department.
- Seale, J. K., & Pockney, R. (2002). The use of the Personal Home Page by adults with Down's syndrome as a tool for managing identity and friendship. *British Journal of Learning Disabilities*, 30(4), 142–148. <https://doi.org/10.1046/j.1468-3156.2002.00195.x>
- Shane-Simpson, C., Brooks, P. J., Obeid, R., Denton, E., & Gillespie-Lynch, K. (2016). Associations between compulsive internet use and the autism spectrum. *Research in Autism Spectrum Disorders*, 23, 152–165. <https://doi.org/10.1016/j.rasd.2015.12.005>
- Shankleman, M. (2020). *Adolescent social media use and well-being* [Pro_doc, Canterbury Christ Church University].
<https://repository.canterbury.ac.uk/item/8w63v/adolescent-social-media-use-and-well-being>

- Shifflet-Chila, E., Harold, R., Fitton, V., & Ahmedani, B. (2016). Adolescent and family development: Autonomy and identity in the digital age. *Children and Youth Services Review, 70*. <https://doi.org/10.1016/j.childyouth.2016.10.005>
- Shin, W., & Lwin, M. O. (2017). How does “talking about the Internet with others” affect teenagers’ experience of online risks? The role of active mediation by parents, peers, and school teachers. *New Media & Society, 19*(7), 1109–1126. <https://doi.org/10.1177/1461444815626612>
- Shotton, M. (1991) The costs and benefits of computer addiction. *Behaviour and Information Technology, 10*, 219–230.
- Singer, J. (1999). Why Can’t You Be Normal for Once in Your Life? In M. Corker, & S. French (Eds.), *Disability Discourse*. Open University Press.
- Singleton, A., Abeles, P., & Smith, I. C. (2016). Online social networking and psychological experiences: The perceptions of young people with mental health difficulties. *Computers in Human Behavior, 61*, 394–403. <https://doi.org/10.1016/j.chb.2016.03.011>
- Staksrud, E., Ólafsson, K., & Livingstone, S. (2013). Does the use of social networking sites increase children’s risk of harm? *Computers in Human Behavior, 29*(1), 40–50. <https://doi.org/10.1016/j.chb.2012.05.026>
- Steinfeld, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology, 29*(6), 434–445. <https://doi.org/10.1016/j.appdev.2008.07.002>
- Turner, A. (2015). Generation Z: Technology and Social Interest. *The Journal of Individual Psychology, 71*(2), 103–113. <https://doi.org/10.1353/jip.2015.0021>

UCL. (2019). *Rough Guide to Social Media Use for Teens with Autism*.

https://www.ucl.ac.uk/grand-challenges/sites/grand-challenges/files/rough_guide_to_social_media_use.pdf

UKCIS (UK Council for Internet Safety). (2019). *Digital Resilience Framework*.

<https://www.gov.uk/government/publications/digital-resilience-framework>

UKCIS (UK Council for Internet Safety). (2020). *Education for a Connected World*.

GOV.UK. <https://www.gov.uk/government/publications/education-for-a-connected-world>

UKCIS (UK Council for Internet Safety). (2021). Digital Passport supporting care

experienced children. *Internet Matters*. <https://www.internetmatters.org/ukcis-vulnerable-working-group/ukcis-digital-passport/>

United Nations Convention on the Rights of the Child (1989) (UNCRC) 'Your rights under the UNCRC' United Nations Children's Fund (UNICEF) Youth Voice. Retrieved from:

<https://www.unicef.org/child-rights-convention>

UNESCO (2017). A guide for ensuring inclusion and equity in education. Paris:

UNESCO. Retrieved from:

<http://unesdoc.unesco.org/images/0024/002482/248254e.pdf>

Valkenburg, P. M., & Peter, J. (2007). Online Communication and Adolescent Well-Being:

Testing the Stimulation Versus the Displacement Hypothesis. *Journal of Computer-Mediated Communication*, 12(4), 1169–1182. <https://doi.org/10.1111/j.1083-6101.2007.00368.x>

Valkenburg, P. M., & Peter, J. (2009). Social Consequences of the Internet for

Adolescents: A Decade of Research. *Current Directions in Psychological Science: A*

Journal of the American Psychological Society, 18(1), 1–5.

<https://doi.org/10.1111/j.1467-8721.2009.01595.x>

Valkenburg, P. M., & Peter, J. (2011). Online Communication Among Adolescents: An Integrated Model of Its Attraction, Opportunities, and Risks. *Journal of Adolescent Health*, 48 (2), 121–127. <https://doi.org/10.1016/j.jadohealth.2010.08.020>

Valkenburg, P., Schouten, A., & Peter, J. (2005). Adolescents' Identity Experiments on the Internet. *New Media & Society*, 7, 383–402.

<https://doi.org/10.1177/1461444805052282>

Vallerand, R. J., & Ratelle, C. F. (2002). Intrinsic and extrinsic motivation: A hierarchical model. In *Handbook of self-determination research* (pp. 37–63). University of Rochester Press.

van der Aa, C., Pollmann, M. M. H., Plaat, A., & van der Gaag, R. J. (2016). Computer-mediated communication in adults with high-functioning autism spectrum disorders and controls. *Research in Autism Spectrum Disorders*, 23, 15–27.

<https://doi.org/10.1016/j.rasd.2015.11.007>

van Schalkwyk, G. I., Marin, C. E., Ortiz, M., Rolison, M., Qayyum, Z., McPartland, J. C., Lebowitz, E. R., Volkmar, F. R., & Silverman, W. K. (2017). Social Media Use, Friendship Quality, and the Moderating Role of Anxiety in Adolescents with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 47(9), 2805–2813. <https://doi.org/10.1007/s10803-017-3201-6>

Veissière, S. P., & Stendel, M. (2018). Hypernatural monitoring: A social rehearsal account of smartphone addiction. *Frontiers in Psychology*, 9, 141–141.

<https://doi.org/10.3389/fpsyg.2018.00141>

- Vermeulen, P. (2019, February 15). *Autism and happiness: From neurodiversity to neuro-harmony*. <https://www.ucl.ac.uk/ioe/events/2019/mar/autism-and-happiness-neurodiversity-neuro-harmony>
- Vivash, J., Dockrell, J., & Lee, F. (2018). The re-alignment of educational psychologists in supporting primary schools to enhance provision for children with speech language and communication needs. *Educational and Child Psychology Pp.* 43-59. (2018).
- Walther, J. B. (2007). Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and cognition. *Computers in Human Behavior*, 23(5), 2538–2557. <https://doi.org/10.1016/j.chb.2006.05.002>
- Walther, J. B., Loh, T., & Granka, L. (2005). Let Me Count the Ways: The Interchange of Verbal and Nonverbal Cues in Computer-Mediated and Face-to-Face Affinity. *Journal of Language and Social Psychology*, 24(1), 36–65. <https://doi.org/10.1177/0261927X04273036>
- Wang, V., & Edwards, S. (2016). Strangers are friends I haven't met yet: A positive approach to young people's use of social media. *Journal of Youth Studies*, 19(9), 1204–1219. <https://doi.org/10.1080/13676261.2016.1154933>
- Wehmeyer, M. L., Shogren, K. A., Zager, D., Smith, T. E. C., & Simpson, R. (2010). Research-based principles and practices for educating students with autism: Self-determination and social interactions. *Education and Training in Autism and Developmental Disabilities*, 45 (4), 475–486. Scopus.
- Weidman, A. C., Fernandez, K. C., Levinson, C. A., Augustine, A. A., Larsen, R. J., & Rodebaugh, T. L. (2012). Compensatory internet use among individuals higher in social anxiety and its implications for well-being. *Personality and Individual Differences*, 53 (3), 191–195. <https://doi.org/10.1016/j.paid.2012.03.003>

- Wells, M., & Mitchell, K. J. (2014). Patterns of Internet Use and Risk of Online Victimization for Youth with and Without Disabilities. *The Journal of Special Education, 48* (3), 204–213. <https://doi.org/10.1177/0022466913479141>
- World Health Organisation (WHO). (2019). *ICD-11*. <https://icd.who.int/en>
- Willig, C. (2008). *Introducing Qualitative Research*. McGraw-Hill: Open University Press.
- Willig, C. (2013). *Introducing qualitative research in psychology* (Third edition.). McGraw Hill Education, Open University Press.
- <http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=nlebk&AN=591975&site=ehost-live&scope=site&custid=s8454451>
- Winter-Messiers, M. A. (2007). From Tarantulas to Toilet Brushes: Understanding the Special Interest Areas of Children and Youth with Asperger Syndrome. *Remedial and Special Education, 28*(3), 140–152.
- <https://doi.org/10.1177/07419325070280030301>
- Woods, H. C., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence, 51*, 41–49. <https://doi.org/10.1016/j.adolescence.2016.05.008>
- Wright, K. B. (2005). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication, 10*(3), JCMC1034. <https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>
- Wright, M. F. (2018). Cyber Victimization and Depression among Adolescents with Autism Spectrum Disorder: The Buffering Effects of Parental Mediation and Social

Support. *Journal of Child & Adolescent Trauma*, 11(1), 17–25.

<https://doi.org/10.1007/s40653-017-0169-5>

Yardley, L. (2008). Demonstrating validity in qualitative psychology. In J. A. Smith (Ed.), *Qualitative Psychology* (2nd ed., pp. 235–251). London: Sage.

Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology & Health*, 15 (2), 215–228. <https://doi.org/10.1080/08870440008400302>

Yardley, L. (2017). Demonstrating the validity of qualitative research. *The Journal of Positive Psychology*, 12(3), 295–296.

<https://doi.org/10.1080/17439760.2016.1262624>

Zilka, G. C. (2018). Why Do Children and Adolescents Consume So Much Media? An Examination Based on Self-Determination Theory. *Global Media Journal*, 16(30), 1–10.

7 Appendices

7.1 Appendix A: Literature Search Strategy

In order to explore literature relevant to this study, searches were carried out through the use of key psychological and educational databases. These databases were selected in order to identify papers specifically related to the areas of psychology and education and to reflect the nature of the research questions. Databases searched:

- British Education Index (EBSCO)
- ERIC (EBSCO)
- PsychInfo
- Scopus

Database searches were limited, where possible, to include: only peer reviewed journal articles; literature published after the year 2000; articles published in English. The UCL Explore search engine was used and Google Scholar and Google were later used to identify further grey literature. The researcher used the following terms during the literature search process in various combinations:

- Special educational needs – learning difficulty OR disability – social communication difficulties OR needs – autistic spectrum condition OR disorder – speech AND/OR language difficulties OR – communication and interaction – mild OR moderate learning disabilities - voice of young people with learning disabilities
- Social connectedness – Social connection – social inclusion – friends – friendships
- Adolescents – young people
- Social media – social networking sites - computer mediated communications – internet OR online communication – digital experiences – social lives

A snowballing of literature and research identified from already acquired reference lists also added to the literature incorporated. The resulting literature and research were included in this report based on their perceived relevance to the current study's aims and research questions.

7.2 Appendix B: Participant information

Name	Age	Gender	Ethnicity	Type of interview	Diagnosis
Lola	13	Female	White British	Video call	None formal (Awaiting ASC assessment + SLCN)
Luke Sky	13	Male	White British	Face-to-Face	ASC
Bobby	13	Male	White British	WhatsApp	ASC
Owen	14	Male	Afro-Caribbean	Voice call	ASC
Kel	14	Male	Biracial	Video call	ASC
Charlie	14	Non-B	White British	Voice call	ASC and associative anxiety
Ryan	15	Male	British Indian	Video call	ASC and SLCN (stammer)
Ava	15	Female	Black British	Voice call	None formal (SLCN)




7.3 Appendix C: All About Me

Technology and Me



Hi! My name is **Khush**. Here is an avatar of me which I made myself.



Here are my favourite things I like to do on my phone:

 <p>Play Vineyard Valley (a puzzle game)</p>	 <p>Watch reaction videos on YouTube</p>	<p>Follow my friends and celebrities I like on Instagram</p> 
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Also, I do not like to...

 <p>Be on my phone too late at night</p>	<p>Argue with or be unkind to anybody</p>	<p>Use my phone to text message – (I prefer WhatsApp)</p> 
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What about you?


If you are happy to, today I am going to ask you some questions, and ask you to do some activities with me. If at any point you wish to stop, or just take a break, **you can tell me and I will listen.**

7.4 Appendix D: Example of online Survey


Communication Technology And Me

1. How old are you? 

- 12 years old
- 13 years old
- 14 years old

2. What is your gender? 

- Female
- Male
- Non-Binary
- I prefer not to say

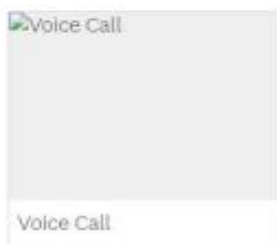
6. Are there any apps you would definitely NOT want to use? Please tell me what they are by typing in the box here: 


- Smartphone
- Smart Tablet e.g. iPad or Google tablet
- Laptop
- Gaming stations e.g. Play Station
- Other (please specify)

4. What are the MAIN reason(s) you use the device(s)? 

- Video Calling (e.g. FaceTime or HouseParty)
- Voice Calling
- Texting (e.g. WhatsApp or usual text message)
- Other (not listed here) - please tell me what else:
- Social Media or Social Networking (e.g. SnapChat or Instagram)
- Just for entertainment and fun

5. If you had a clean start on a smartphone, what would be the first 5 apps you would likely use (including 'call' or 'messaging' included on devices)? 



7. Do you prefer speaking to friends and family... 


- ...online
- ...in real life (i.e. in person)
- ...both
- ...depends on the situation

8. Do you have any Social Media accounts? 

- Yes
- No
- I don't want to say

9. Think about your social life (friends and family). Please choose which statement fits you best: 

	True	Somewhat true	False
Friends and family in-real-life are the only people I speak to using technology (i.e. online)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have friends online who I have not met in-real-life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I only have online friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't feel I have any friends, online or in real-life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. During this time of lock down and social distancing, have you been communicating using technology more, the same or less than before? This includes talking and texting using smartphones, iPads or social media apps. 

a lot LESS the SAME a lot MORE



7.5 Appendix E: Example Interview schedule with prompts

Preamble

Preamble... **All About Me – share again – what about you?**

Preamble... **Thank you for agreeing to talk with me today. I would like to chat with you about how your social life and your views and experience on different types of communication technologies** [remind YP of types of CT we will be speaking about - visual]

CONSENT Hopefully, speaking to me can give you a structured activity in this time. I wanted to speak to you about how you have been using technology to communicate with people.

RIGHT TO WITHDRAW Before we go on, it's important you know you do not need to answer a question, or continue until the end of this call. If at any time you change your mind, you can tell me and I will listen. You can say no, or I don't want to answer that or next question. Or you can show me (hand or shake head) and I will understand. That will be fine. **Check YP can show sign.**

Exploring friendships and Social Lives online/offline

Do you have a friendship group that you hang around with in school?

Prompts... Tell me more...

How come those particular people hang around together?

Do you have other friends outside of school?

Prompt... How did you meet your friends outside of school?

How do you and your friends usually hang out online?

Could you talk me through an example of how you (or your friends) have recently socialised online?

Prompts... How else?

Digital use Preferences and Motivations for use

I can see you chose ____ as an app you would use to socialise with friends. What you like about this app?

Prompts... Did you notice any changes to your social life after you started using this?

Can you tell me anything you dislike about this app?

You said you would definitely not use ____. Why would you definitely not use this?

[possible question]

On ___ you can add comments. Is this something you do?

Prompts... What do you mostly comment on?

Experiences of using digital communication

In the survey, you said you prefer speaking to friends by using ___. Why is ___ a good way to communicate for you?

Prompt... How is that different to ___?

Tell me more...

Is there a time ___ feels a less suitable way to communicate?

Prompt... Tell me more...

How does speaking to someone F2F differ to you speaking to them using your ___?

Prompt... What is different to IRL compared to Online?

Is there a time you definitely prefer to speak to someone IRL compared to online?

What about the other way around?

Have you experienced difficulties with friends when speaking with them using your apps?

Prompt... How did this happen?

How did you manage this?

In your experience, do you think that people act the same when you talk using technology or do people act differently?

Prompt... Can you explain...

What's the same? What's different?

Have you, or a friend, experienced any 'miscommunication' online before?

[possible prompt] This is where something comes across differently over technology (for example, in a text) compared to real life?

Social Media views and experiences

You said you have some Social Media accounts. When did you first start using SM?

How did you choose which you use?

In your opinion are your 'friend' followers online the same as 'real friends' or different?

Either:

On the survey you said you have friends online who you have not met in-real-life.

Prompt.... Who are these people?
Are they important to you?

On the survey, you said you only speak to people online who you know in-real-life.

Prompt.... Can you tell me more about this

How do you decide who to accept (and who to reject) as a friend on social media?

Prompt... Has this ever caused any difficulties between you and other users?

What else do you use social media for?

If you ever have a problem with social media, what would you do?

Prompt... Please explain why you would...

Online communication experiences as + or -

Some young people your age have found there is both good and bad things about using technology to make and keep friendships.

Is there anything negative which has happened to you (or one of your friends) online – if so, I would be very interested in hearing about the experience and what you thought about it?

Prompts... When did this happen? Who was involved? Please explain...
Tell me more...

[possible question]

Thank you for sharing that with me. Has anything else, different, happened which you felt was not a good experience?

Can you think of a time when using technology to be social has really helped you?

Prompts... Talk me through what happened?

Could you tell me more...?

How do you think the technology specifically helped in this case?

Is there anything at all about communicating using technology that we have not yet talked about that you would like to mention?

7.6 Appendix F: Transcript excerpt (Bobby WhatsApp interview)

- Interviewer:** Ok. Let's move onto the other apps you named as your favourites to use. What do you like about them which makes you want to use them?
- Participant:** YouTube keeps me unboored. Snapchat is amazing I use it all the time with my friends to speak call and send streaks I love it. The bad thing bout YouTube is there is a lot of nonsense. When people do bad videos that wastes my time (crying laughing face x2)
- Interviewer:** I like YouTube too. Tell me more about speaking with friends using Snap Chat. Why is this a good way to communicate?
- Participant:** Its just so fun. And its banter. Coz I can send a streak and my friend sees it and sends one back.
- Interviewer:** How is this better than a phone call or a text?
- Participant:** It's not serious like that. That's more for when you want to proper talk. Snap Chat is for banter with your lads. Like it's in real time too so you know what people are up to. Me and my friends' banter at lunchtime now there's no school. So, it's nice coz its like they're there.
- Interviewer:** Great. Thank you for that. Next, you said you wouldn't use Facebook Messenger. Can you tell me a little more about why that is?
- Participant:** Facebook is for old people and outdated a lot (crying laughing face x2) And messages is just a no go. It would be like my nan
- Interviewer:** Haha. Why is that so bad? To talk to them through Facebook?
- Participant:** Haha. It's so bad why use that. When you have Snap Chat. Like those people must be crazy. My nan can just call me. Which she does.
- Interviewer:** (crying laughing face) I see. Ok well, let's move onto that. You also said on your survey that you voice call and facetime. Do you prefer one over the other?
- Participant:** I use both a lot to speak to my friends. But I do like face time a lot better, I think.
- Interviewer:** Ok. What do you prefer about Face Time?
- Participant:** That I can actually see the person. Feels more real.
- Interviewer:** I see. Is face time ever better than real life conversations?
- Participant:** Na. I like actually being face-to-face.
- Interviewer:** Can you tell me more about that?
- Participant:** It is just nice to have a conversation in real life so you can see that person. Can get confusing otherwise.
- Interviewer:** I see. Can you tell me a time this has happened? When things get confusing?
- Participant:** I can't think of one time but just happens. Like, if you can't see someone it get's confusing to know how they are. Like they say how they are but you don't actually know. I think my Asperger's doesn't help with that.
- Interviewer:** Can you tell me a bit more about that? About your Asperger's?
- Participant:** It's more hard for me to know how someone's thinking if I can't see them.
- Interviewer:** I see. Would you be able to explain more about this?
- Participant:** I don't think I can (crying laughing face) it's hard to explain. It just is that way.
- Interviewer:** Ok let's move on. Thank you. Have you had any negative experiences when communicating with friends online?
- Participant:** No, I haven't I get on with everyone
- Interviewer:** Ok cool. That sounds really good
- Participant:** Well my mate Rayeen is a pain in the ass (crying laughing emoji) he is irritating but he is fine
- Interviewer:** Haha. Ok. And what about positive experiences? You've mentioned a few already.
- Participant:** I have lots with lots of people. If I don't feel it's positive, I talk to my Mum about it but that never happens. I only talk to people I know so anything that happens we can talk about and work through. It's different if you speak to strangers online but I don't do that so there's no problems
- Interviewer:** I see. Can I ask how you've learnt to keep yourself safe online this way?
- Participant:** Yea. Just I have always done it and my mum and dad do it so I do it too.
- Interviewer:** Have school also helped?
- Participant:** Yes. We have lots of PSHE where we learn bout things like that. Even with like people being different. My mum taught me we have to respect people's differences. Like I'm different too. Some people do and some people don't like to speak online. I like my own time so I like people to respect that.
- Interviewer:** Ok thank you for that. Let's move on. You also said you game and communicate with friends

using that too. What gaming do you do? Is it a console or apps on your phone?

Participant: Console laptop. Phone is for snapchat insta and Twitter (party emoji and crying laughter emoji). I play FIFA and Fortnite. And speak to m friends on PlayStation

Interviewer: Do you play these with friends also? [referred to "I play FIFA and Fortnite"]

Participant: Yep with all my lads

Interviewer: Are your PlayStation pals people you know in real life? Or are some online pals?

Participant: Real life. People from school

Interviewer: Great. And when you do play with them etc. Is it to play the game or hang with your friends that motivates you to play these games? What's your main reason for playing?

Participant: I just play for fun. And to speak to them. To catch up on things. I wouldn't play as much if I couldn't catch up with them. It's like being at lunch at school but over a computer.

Interviewer: ok that makes sense

Participant: yep

Interviewer: So it wouldn't be as fun to play without your friends there too?

Participant: No it would be boring no one to speak to (crying laughing face)

Interviewer: (crying laughing face) ok let's move onto speaking to friends or family online vs offline

Participant: In real life is better because I don't have time in my day to speak to them online always. I'm a busy guy and there's other things I want to do. Family is better in real life

Interviewer: Why is this?

Participant: They take too long to type. And friends I don't mind really. What they prefer.

Interviewer: Can you tell me time when you definitely prefer to speak to someone in real life compared to online?

Participant: If I was upset I would probably just do neither. It doesn't really matter bout feelings I am happy to talk to people whenever. If I had a problem it's better to do it online than in person. It's easier to say.

Interviewer: Can you tell me more about that?

Participant: It's easier to say coz you can think about things first and then say them. That's good for me. I need that time sometimes. Not just sometimes (crying laughter emoji)

7.7 Appendix G: Transcript excerpt (Ryan Video Call interview)

Interviewer: Oh, wow ok that's nice you have them now. If you feel ok telling me then could you tell me more about what things were like for you before? With the people being unkind you said?

Participant: Ah yea that's like ages ago though. But when I went, like Primary school was fine my dad left his job to look after me when I was in Reception because I didn't talk for ages and things and it was like really, really hard for them but now I can't stop talking [laughs]

Interviewer: [laughs] that's ok -

Participant: [laugh] yea its good now everyone says I should shut up [laughs]

Interviewer: you were saying about things being ok in Primary school -

Participant: Oh, yea things were ok but then I went to secondary school and it was really hard coz like my mates didn't go to my school and it was – it just wasn't nice. I went quite bad and I couldn't deal with things and it was too much. And then people were a bit unkind to me like someone got my number and they made this meme and -

Interviewer: - someone made a meme about you?

Participant: Yea it was about me. Like obviously at that point people didn't know about my autism and that coz nobody really knew me, did they? Because it was Y7? But I find change hard and so yea they made this meme but my dad found out and he was straight into my school

Interviewer: How did your Dad find out?

Participant: I told him. Well my Dad kind of checks my phone anyway. I don't really mind coz I know its for my safety so he said till I'm 18

Interviewer: You don't mind that?

Participant: No, it's, it's actually really good coz like he helps me understand things and that and like banter. Like I'm really good at it now [laughs] most of the time but when I was younger, I didn't get it always. Like even with the meme at first, I was gassed coz I thought people wow people made a meme about me but then when I showed my Dad, he kind of, like he kind explained that they weren't actually being very nice. So since then I'm like that's it I'm only trusting my

closest truest friends and that's it.

Interviewer: I'm glad you're feeling like you can trust again now. Did you ever find out who made the meme?

Participant: ... well, kind of. We got down to two people but they both blamed each other so we never knew. Anyway, those boys apologised and we're kind of mates again now anyway. Not like best brothers but like we're cool. My teacher helped with that and we all had to sit in a circle and talk about it and that

Interviewer: Thank you for sharing that with me. So, your close best friends and your other mates, how do you meet your friends outside of school? Or don't you do that?

Participant: Oh no yea we're bantering all the time

Interviewer: What do you use to socialise with them online?

Participant: We WhatsApp all the time but me and my best mates facetime a lot too coz we all have iPhones well apart from one of my mates [name] we all have an iPhone

Interviewer: Ah ok, so yes, on your survey you said you like to video time. What do you like about doing this?

Participant: It's just jokes isn't it. Me and my boys talk on it every day. Well every day but sometimes we just meet on the Xbox or PS so then there's that too

Interviewer: What do you like about gaming with your friends?

Participant: I love it. It's just banter we have just a good time and my mates are so funny

Interviewer: Did you notice any changes to your social life after you started using these technologies to keep in touch with your close friends?

Participant: Yea its just a good way to like hang out isn't it. Coz like not all of live near each other like my mate [name] wouldn't be allowed out after school and then now there's so much school work and that and oh yea! We do that as well we'll like help each other out if we have school work so it's proper good like that like I'll help with English coz I'm proper good and then my other mate will do Maths coz he's proper good at it

Interviewer: How do you help each other? Online?

Participant: Yea we'll use like facetime coz you can group chat on it and then like show each other. My mate actually like shows us how to do stuff [laughs] its bare funny like proper teacher we all say he'll be a teacher

Interviewer: That sounds so supportive, thank you for sharing that. So, you've shared some ways how you socialise online which is great to hear. In your survey you said you prefer speaking to friends in person or online, depending on the situation. Can you tell me more about how you decide this?

Participant: As in... you mean

Interviewer: So, is there a time you prefer speaking to a friend in real life compared to online? Or like a time you prefer speaking online compared to in real life?

Participant: Ooh ok I see I see yea... I think its really changed for me so before I used to be really bad online [laughs] like not bad but I think my Dad told you when you spoke to him

Interviewer: Yes you're Dad told me a little -

Participant: yea so when I was younger, I was like really not good at socialising online. I think my autism means I don't really sometimes see things how people mean to say them to me. Like I told you about that meme, I think everyone's my mate coz I'm just cool like that but not everyone is kind and I kind of had to learn that. So, I used to always speak online but now I still do that but only to my closest mates like no-one else, I don't trust no-one. Like I would follow them and accept their request but I don't like, like I practice safety because I have to protect myself coz my Dad can't do it forever

Interviewer: How do you feel you protect yourself online?

Participant: Like I don't chat to strangers or people that aren't my mates and I show my Dad if anything worries me or sometimes, he checks who I'm talking to myself

7.8 Appendix H: Example of coded transcript extract using NVivo

Participant: Oh, yea things were ok but then I went to secondary school and it was really hard coz like my mates didn't go to my school and it was – it just wasn't nice. I went quite bad and I couldn't deal with things and it was too much. And then people were a bit unkind to me like someone got my number and they made this meme and -

Interviewer: - someone made a meme about you?

Participant: Yea it was about me. Like obviously at that point people didn't know about my autism and that coz nobody really knew me, did they? Because it was Y7? But I find change hard and so yea they made this meme but my dad found out and he was straight into my school

Interviewer: How did your Dad find out?

Participant: I told him. Well my Dad kind of checks my phone anyway. I don't really mind coz I know its for my safety so he said till I'm 18

Interviewer: You don't mind that?

Participant: No, it's, it's actually really good coz like he helps me understand things and that and like banter. Like I'm really good at it now [laughs] most of the time but when I was younger, I didn't get it always. Like even with the meme at first, I was gassed coz I thought people wow people made a meme about me but then when I showed my Dad, he kind of, like he kind explained that they weren't actually being very nice. So since then I'm like that's it I'm only trusting my closest truest friends and that's it.

Participant: We WhatsApp all the time but me and my best mates facetime a lot too coz we all have iPhones well apart from one of my mates [name] we all have an iPhone

Interviewer: Ah ok, so yes, on your survey you said you like to video time. What do you like about doing this?

Participant: It's just jokes isn't it. Me and my boys talk on it every day. Well every day but sometimes we just meet on the Xbox or PS so then there's that too

Interviewer: What do you like about gaming with your friends?

Participant: I love it. It's just banter we have just a good time and my mates are so funny

Interviewer: Did you notice any changes to your social life after you started using these technologies to keep in touch with your close friends?

Participant: Yea its just a good way to like hang out isn't it. Coz like not all of live near each other like my mate [name] wouldn't be allowed out after school and then now there's so much school work and that and oh yea! We do that as well we'll like help each other out if we have school work so it's proper good like that like I'll help with English coz I'm proper good and then my other mate will do Maths coz he's proper good at it

Interviewer: How do you help each other? Online?

Participant: Yea we'll use like facetime coz you can group chat on it and then like show each other. My mate actually like shows us how to do stuff [laughs] its bare funny like proper teacher we all say he'll be a teacher

CODE STRIPES

- Meeting new 'Friends' online
- Using CT to afford thinking time in difficult social situations
- Playing together by gaming together
- Developing on areas of personal interest
- Role of schools in conflict resolution
- Siblings as important guidance and support system
- Enhanced feelings of social rejection and loneliness
- Generational gap - dissonance between adult and adolescent
- Recovering and growing from negative social experience
- Uncertainty of others intention
- Choosing CT to suit levels of comfortability with individual others
- Recovering social validation online
- Videos as valuable learning resource
- Attaining sense of achievement from online activities
- Experiences of cyberbullying
- Difficulty managing time spent online or on device
- Wary of possible perpetrators
- Images shared on social media impacting on confidence and self-esteem
- Role of schools in teaching e-safety
- Relationships with parents act as protective factor

Coding Density

CODE STRIPES

- Meeting new 'Friends' online
- Using CT to afford thinking time in difficult social situations
- Playing together by gaming together
- Developing on areas of personal interest
- Role of schools in conflict resolution
- Siblings as important guidance and support system
- Enhanced feelings of social rejection and loneliness
- Generational gap - dissonance between adult and adolescent
- Recovering and growing from negative social experience
- Uncertainty of others intention
- Choosing CT to suit levels of comfortability with individual others
- Recovering social validation online
- Videos as valuable learning resource
- Attaining sense of achievement from online activities

Coding Density

7.9 Appendix I: Information sheet and consent form for parents

Institute of Education



Dear Parent(s),

My name is Khush Patel and I am a trainee Educational Psychologist working in _____. I am writing to you to request permission for the involvement of your son/daughter in an exciting research project taking place at _____.

What is the research project about?

This project aims to:

- Explore children's motivation and experiences of using Social Media
- Compare social media use between children with various (special) educational needs
- Involve celebrating the views of all children, with activities being adapted to suit each individual child

What does the project involve?

The project involves two parts:

Part 1: a questionnaire, completed in school, on social media. This will take about 15 minutes to complete. Questions such as: 'What do you enjoy about Social Media?' will be asked. Children who NOT use social media can still take part in this part! We want to hear their views too.

Part 2: an activity-based interview (either alone, or as part of a pair – your child can choose) to gather more detail about your child's views on social media. This will take about 45 minutes to complete and will be audio recorded. The interview is not just talking – we will complete activities aimed to be fun, about social media. Reasonable adjustments according to your child's strengths and needs, and in accordance with their EHCP (if they have one), will be made.

Why are we doing this research?

I am doing this research in order to find out how and why children use Social Media platforms, and what the experiences are for children who have Special Educational Needs. I believe that it is extremely important to hear the child/young person's perspective in their education, which is all too often lost.

Will anyone know I (or my child/young person) have been involved?

No. We would like to assure you that your child's views/data will be kept securely and fully anonymised so that names do not appear on any of the research. All personal details will also remain confidential at all times. Your child will be reminded of your right to withdraw from the research at any point. The Educational Psychologist has been DBS checked. If the young person says something where the researcher feels that the young person is at risk, information will be passed on the relevant safeguarding officer in school.

What will happen to the results of the research?



I will produce a report at the end of the research which will be finished in August 2020. Your child/young person's name will remain anonymous and all names will have pseudonyms instead (fake names). I plan to share the results of the research with other Educational Psychologists and it may be published to a wider audience at a later date. You will be

able to receive a copy of this report. I plan to retain data for two years and it will be kept secure on a password protected computer.

Do they have to take part?

No. It is entirely up to you whether or not your child/young person choose to take part. We hope that if you do choose to be involved then you will find it a valuable experience. I would however like to reassure you that if you choose not to take part there will be no negative repercussions for your child. Your child will be asked to give their consent for this project too.

Data Protection Privacy Notice

The data controller for this project will be University College London (UCL). The UCL Data Protection Office provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk. Further information on how UCL uses participant information can be found here: www.ucl.ac.uk/legal-services/privacy/participants-health-and-care-research-privacy-notice.

Can I talk to someone before agreeing to take part?

If you would like to further information about this project you can contact me on, khushbu.patel.17@ucl.ac.uk. You are welcome to ask us any questions or discuss any worries you may have.

Please TICK the relevant boxes below and return this form to the school.

-
- I have read and understood this information sheet about the research.
- I agree for my child to take part in the questionnaire.
- I agree for my child to take part in an activity-based interview.
- I understand that if any of the words are used in reports or presentations, they will not be attributed to me or my child/young person.
- I understand that my child/young person can withdraw from the project at any time, and that if we choose to do this, any data we have contributed will not be used.
- I understand that I can contact Khushbu Patel at any time and request for my data to be removed from the project database.
- I understand that the results will be shared with **UCL IoE** and in research publications and/or presentations.

- Name of Young Person _____
- Name of Parent/Carer _____
- Date _____
- Signature _____

THANK YOU FOR READING THIS LETTER!

7.10 Appendix J: Consent form for participants



Consent Form

I have seen the information giving PowerPoint about this research.

I agree to take part in an activity-based interview.

I understand that my real name will not be used in any written report about this project.

I understand that I can withdraw from the project at any time, and that if I choose to do this, any I shared will not be used.

I understand that I can contact Khushbu Patel at any time and request for my data to be removed from the project database.

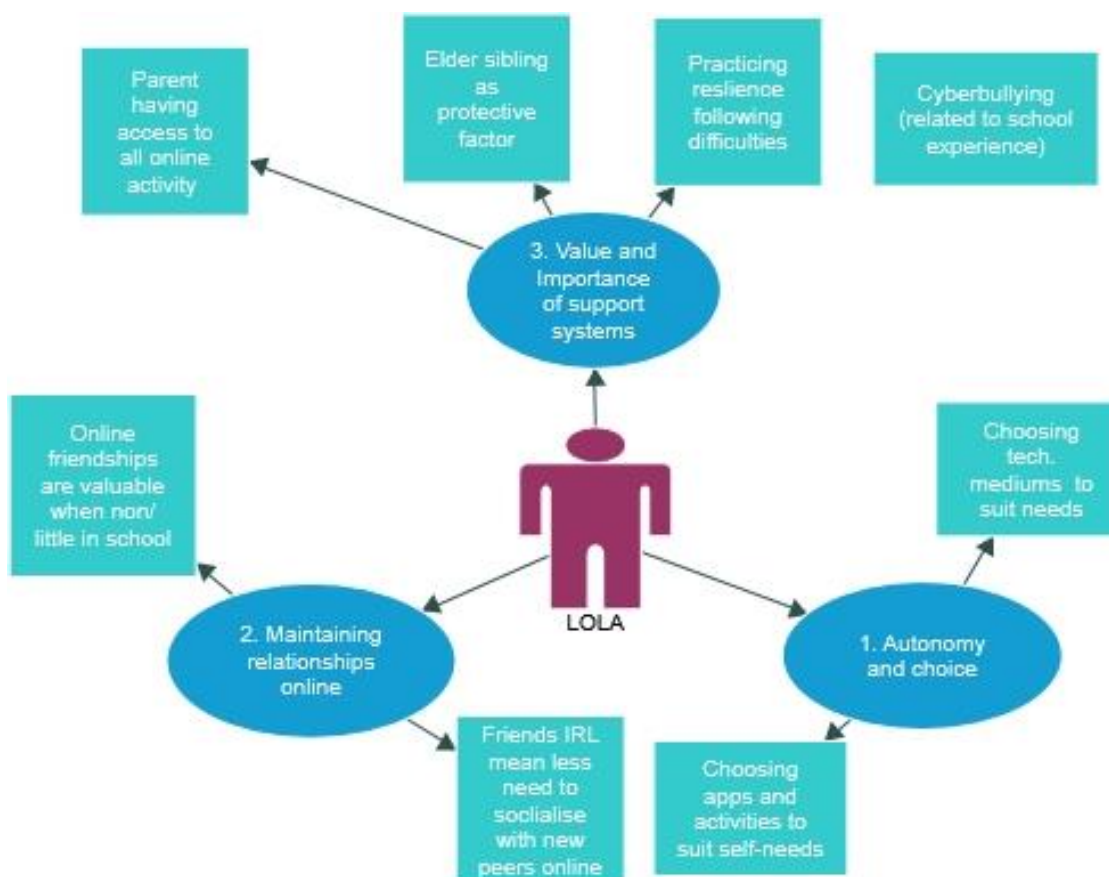
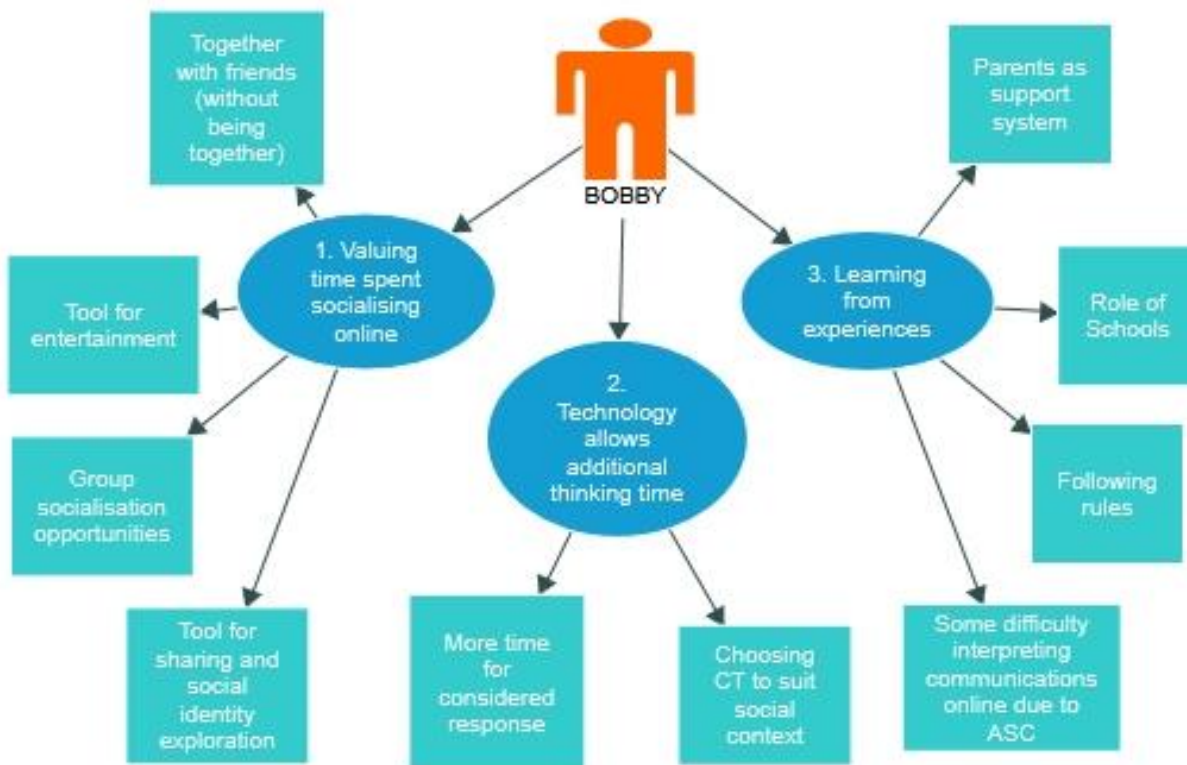
Your name: _____

Date _____

Signature _____



7.11 Appendix K: Examples of individual thematic analysis maps



7.12 Appendix L: Example of initial coding and peer-review coding

Example of coding and peer-review coding (Ryan)

Transcript excerpts from Ryan	Researcher codes	Peer-review codes
Like even with the meme at first, I was gassed coz I thought people wow people made a meme about me but then when I showed my Dad, he kind of, like he kind explained that they weren't actually being very nice. So since then I'm like that's it I'm only trusting my closest truest friends and that's it.	Miscommunications online Experience of cyberbullying	Misunderstandings of online behaviour Understanding types of cyber bullying
that's what my Insta's so good at coz I follow other musicians and they follow me and it gives my ideas and people even request songs for me to do which is really cool. And like I only comment on friends posts so on my private account its just that but on my music account everyone who's a fan can comment which is nice for me	Tool for entertainment New skills and independence Seeking 'likes'	Tool for sharing Pursuing new skills and interests Seeking social validation
with Insta posts people only post the best bits and things they got and that on there nobody posts being sad or whatever. Well if they did it's like attention seeking so you don't do that	New social rules and conduct	Unwritten social rules and conduct

Example of coding and peer-review coding (Lola)

Transcript excerpts from Lola	Researcher codes	Peer-review codes
Maybe sometimes when you can be angry. This has happened to me before; be a bit angry but you don't want to go see someone face-to-face coz you're bit too angry or bit upset so calling them and sorting it out on the phone so	Choice CT allowing 'time to think'	Utilising CT options Using CT to manage difficult social situations

<p>you know it keeps you a bit more sensible and not walking off and actually facing your facts</p>		
<p>I have some cookbooks but I use this App called think it's 'Super Cook' where you put the recipes you have in your pantry or in your kitchen you put it in and then you have these recipes like thousands you can choose from</p>	<p>Tool for learning</p>	<p>Personalised learning tool or Personalised tool for learning</p>
<p>I have got like friends that aren't my best friends but on my friends [list]. I do speak to them, don't like ignore them, and I know them but I wouldn't you know if I wasn't like you know really like a little bit close to them I wouldn't follow them because you don't actually know know them that well or what they're like so... I just follow close friends</p>	<p>Awareness of cyberbullying</p> <p>Accountability</p> <p>Choosing virtual 'friends' with care</p>	<p>Awareness of risk</p> <p>Making safe decision online</p> <p>Choosing virtual 'friends' with care</p>

7.13 Appendix M: Results analysis process

Successive revisions of final results presentation (Two examples selected)	Accompanying notes from research journal
<p>1.5 Theme 1: Benefits of exploring a virtual space</p> <p>1.5.1 Positive emotions evoked.....</p> <p>1.5.2 Forming virtual friendships in the absence of RL ones</p> <p>1.5.3 Social needs being met.....</p> <p>1.6 Theme 2: Navigating murky waters.....</p> <p>1.6.1 Optimism on a self-learning journey.....</p> <p>1.6.2 Evidence of being cyber-aware</p> <p>1.6.3 Value for support and guidance</p> <p>1.7 Theme 3: Negative implications of exploring a virtual place.....</p> <p>1.7.1 Associated implications on Mental Health.....</p> <p>1.7.2 SC difficulties offline exacerbated online.....</p> <p>1.7.3 Increased chances of judgement</p> <p>1.7.4 Victim of negative interactions.....</p> <p>1.8 Theme 4: Tools for overcoming real-world barriers.....</p> <p>1.8.1 Broader horizons</p> <p>1.8.2 Digital poverty continued barrier for some.....</p> <p>1.8.3 Increased ability to control social interactions</p> <p>1.8.4 Novel tools towards feelings of improved wellbeing.....</p>	<p>Themes are not self-explanatory and unsure about using metaphors to describe themes. 'Murky waters' is vague and open to interpretation. Would 'navigating potentially unsafe/threatening activities' be better?</p> <p>Benefits and negative implications – maybe one theme? Unsure it's helpful to separate into positive and negative as most of the research body suggests the same dichotomy but findings suggest YP rely on technology to socialise regardless of potential threats.</p> <p>'Virtual space' might imply an area like a chatroom, forum etc. a specific space or context. Some of these are implied but other real time communications are equivalent to a phone call – which is not a 'space'.</p> <p>'Positive emotions' does not work – the contributing codes don't work within the theme either. There is a distinction between these (watching and creating TikTok videos) I feel – one is individually consumed the other is actively created and they may have different connections with social engagement – the TikTok vids being an active social activity or contribution whereas the watching videos is primarily for individual needs but maybe connects with social discussion. Revisit.</p>
<p>1.4 Theme 1: Seeking social connectedness</p> <p>1.4.1 Social needs being met online</p> <p>1.4.2 Forming new relationships and friendships.....</p> <p>1.4.3 Increased ability to control social interactions.....</p> <p>1.4.4 Consequences of technology.....</p> <p>1.5 Theme 2: Tools for overcoming real-world barriers</p> <p>1.5.1 Self-agency in online activities.....</p> <p>1.5.2 Ability to develop new skills</p> <p>1.5.3 Choosing apps which enable improved sense of wellbeing.....</p> <p>1.6 Theme 3: Navigating through potential threats.....</p> <p>1.6.1 Knowledge of e-safety principles</p> <p>1.6.2 Victim of negative online interactions.....</p> <p>1.6.3 Negative impact of online activity on wellbeing.....</p> <p>1.6.4 Value placed on support and guidance.....</p> <p>1.6.5 Optimism on a self-learning e-journey</p>	<p>There is something here about autonomy and competence here (is self-determination theory possibly relevant to the study?)</p> <p>A little vague as to what 'cyber-aware' meant. Would 'cyber safe' be better. Or E-safety (related to UK curriculum)</p> <p>Which sub-themes would be important to present in themes?</p> <p>Wording in Theme 3 still doesn't 'fit' what participants shared. It's not potential threats, they described living with the harms but learning to best manage them.</p>