Supporting Deaf Children in the Digital World: A Mixed-Methods Study of the Deaf Kidz Defenders Programme and Practitioner Perspectives

A study submitted in partial fulfilment of the requirements for the degree of Master of Arts of the University of Hertfordshire

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Abbreviations

BAEA	British Association of Educational Audiologists
BATOD	British Association of Teachers of the Deaf
BERA	British Educational Research Association
BSL	British Sign Language
DCYP	Deaf Children and Young People
DKD	Deaf Kidz Defenders program
DKI	Deaf Kidz International
Ed. Aud.	Educational Audiologist
EHCP	Educational, Health Care Plan
E-safety	All aspects of Internet Safety
HoS	Heads of Service
KCSIE	Keeping Children Safe in Education
Ofcom	Office of Communications
PSHE	Personal, Social, Health and Economic Education
RP	Resource Provision/base
SEN	Special Educational Needs
SSE	Sign Supported English
ToD	Teacher of the Deaf
ToM	Theory of Mind
UH	University of Hertfordshire

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Abstract

The internet is integral to everyday life for Deaf Children and Young People (DCYP). While it is well established that vulnerable students, including those with Special Educational Needs (SEN), are at increased risk of harm online, limited research exists on the specific challenges faced by DCYP in navigating the digital world.

This study aimed to explore this area of research and comprised two distinct strands. The first strand involved implementing and evaluating the Deaf Kidz Defenders (DKD) programme, developed by Deaf Kidz International. The DKD programme was conducted with a group of Key Stage Three students in a resourced provision in the South of England. A mixed-methods approach was adopted, with data collected at three time points: pre-intervention, post-intervention, and one-month follow-up. The results provided insights into the students' specific online vulnerabilities and the effectiveness of the DKD intervention. The second strand involved an online survey completed by 71 professionals, including Teachers of the Deaf and Educational Audiologists. The results from the survey explored current practices, perceived challenges, and the broader views of professionals regarding the online safety of DCYP.

Findings from both strands highlighted the importance of improved support regarding online safety for DCYP. The DKD programme demonstrated promising outcomes, with measurable improvements seen among all participating students, particularly in their awareness of online risks and protective behaviours. Meanwhile, the professional survey revealed widespread concern among Teachers of the Deaf and Educational Audiologists about the lack of tailored resources and training to assist DCYP in navigating online environments. Many professionals reported significant challenges in addressing these issues within current practice frameworks.

This study highlights a pressing need for more DCYP specific e-safety resources and improved information sharing across the professional community. The DKD programme offers a practical, engaging, and accessible solution, particularly due to its visual, game-based format. Further research is recommended to evaluate its impact at scale and across diverse settings throughout the UK.

1. Introduction

Since the internet's introduction and increasingly widespread use, our lives are now more digital than ever. This offers new opportunities for Deaf Children and Young People (DCYP) but also presents new challenges. DCYP are often more vulnerable online than their hearing peers due to factors such as underdeveloped Theory of Mind (ToM) and language abilities. Exposure to the online world is occurring at increasingly younger ages, necessitating the development of essential tools and skills for navigating this landscape. As e-safety is ever-changing, professionals and parents seek effective ways to equip DCYP with the skills to stay safe online. Despite the growing concern, there has been limited research to date on the specific challenges DCYP face online and how professionals can support them. This study aims to address this gap by investigating the views and protective skills of DCYP before and after participating in a tailored e-safety intervention called ‘Deaf Kidz Defenders’ (DKD).

Furthermore, it assesses if this program is suited to the needs of DCYP in the UK, and it compares these findings with the perspectives and practices of professionals working with DCYP in the UK. This was achieved through a combination of quantitative and qualitative data collected from a group of DCYP enrolled in an Additional Resourced Provision (RP) in the South of England. Additionally, Teachers of the Deaf (ToD) and Educational Audiologists (Ed. Aud) were invited to provide their views and current practices through an online survey.

The next chapter presents a literature review, detailing previous research and highlighting the knowledge gap. Chapter 3 explains and justifies the methodology used in this current research. Chapter 4 presents the quantitative and qualitative results. Chapter 5 focuses on discussion, aiming to analyse where this study fits within the wider literature and suggest further areas of study. Finally, Chapter 6 concludes by summarising the study.

2. Literature Review

2.1. Online Usage

Since its invention and steep rise in popularity in the 1990s, the Internet has become an inescapable part of young people's lives. The Office of Communication's (Ofcom) (2024a) report states that 96% of children aged between 3- 17 went online in 2023. By the time they start secondary school, this has increased to 100%. With the invention of smartphones, access to the online world is literally at their fingertips, meaning that young adults spend an average of over six hours a day online (Ofcom, 2024b). Children are going online earlier; shockingly, almost a quarter of five to seven-year-olds now own a mobile phone (Ofcom, 2024a).

The most popular activities online were gaming, watching short videos on sites such as TikTok, communicating with peers and using the internet to help with learning (Ofcom, 2024a). Nearly 90% of teenagers reported gaming at least weekly on one or more platforms (Ofcom, 2023). Despite having age restrictions, Ofcom found that overall use of social media sites or apps among children has increased year-on-year (Ofcom, 2024a). 39% of all 8-17 year-olds upload videos to online platforms, with TikTok remaining the most popular app (Ofcom, 2024a). While Ofcom provides demographic data, Special Educational Needs (SEN) are not one of them.

2.2. Legislation

Internet safety in schools comes under the remit of safeguarding, and there is a comprehensive framework of legislation and statutory guidance for schools to follow to protect the well-being and safety of all students. The Children's Act (1989) establishes the foundations for services to have the welfare of children at the centre and explicitly outlines local authorities' duty of care. The Education Act (2002) applies these tenets to schools, which must protect and promote the welfare of their students, ensuring that safeguarding policies and staff training are adequate.

Specific legislation relating to online safety includes Keeping Children Safe in Education (KCSIE, 2024), a statutory guidance that is updated regularly and that all teachers must read. As of 2020, changes were made to the curriculum to ensure that all schools were teaching e-safety as part of the mandatory curriculum, and more recently, updated changes to KCSIE require e-safety to be part of the annual

safeguarding training for all teachers. Furthermore, the government announced Ofcom as the UK's regulator for online safety duties under the Online Safety Act.

The Sexual Offences Act (2003) includes provisions to protect children from exploitation and abuse. KCSIE also dictates that schools have measures to protect students, such as appropriate filtering and monitoring software, and that pupils are educated about the dangers of online risk. The Counterterrorism and Security Act 2015 focuses on radicalisation and the Online Safety Act (2023) places legal duties and responsibilities on online service providers to minimise risks to young people.

Despite this legislation, only three in ten 8-year-olds report having received regular e-safety lessons in school (Ofcom, 2024a). The landscape of e-safety and child protection constantly evolves, raising the question: Can legislators keep up? For instance, at the time of writing, professionals have been alerted to the subversion of emojis as an ideological code, a development that has recently gained significant media attention (Papadamou et al., 2021; Sigsworth, 2025). Three-quarters of children aged 8-17 who recalled having at least one e-safety lesson in school reported that it was helpful; this rises to 97% when these lessons occur regularly (Ofcom, 2024a), suggesting that if legislation is followed, online instruction in schools is vital and valuable. It is believed that legislators have been slow to respond, with professionals calling for increased support for teachers for over fifteen years (Livingstone, 2025).

2.3. Online Risk

Online risk is typically measured by the likelihood that an action will lead to harm (El-Asam & Katz, 2018; Holmarsdottir, 2024), and with greater online engagement, children’s exposure to these risks escalates. There is consistent evidence across all age groups that children engage in risky behaviours (Ofcom, 2024a; Ofcom, 2023). For example, 51% of children under 13 report using social media platforms despite being below the required age (Ofcom, 2024a). A significant portion of children communicate online with strangers, with 79% of weekly online gamers interacting with others they have not met before (Ofcom, 2024a), and 42% of teenagers regularly receive friend requests from strangers (Ofcom, 2023). Furthermore, many children experience uncomfortable interactions online, with 60% of teenagers having

encountered harmful content online, including inappropriate, sexualised or violent content (HMD, 2025; Ofcom, 2023).

This vulnerability stems from children using the Internet for self-expression and socialising (Livingstone et al., 2019). Historically, adolescents once developed social skills face-to-face; they now increasingly do so online, often outside adult view (2011; Redden & Way, 2017; Martin et al., 2018). This shift has changed how they acquire communication skills and may leave them without support at key moments (Valkenburg & Peter, 2011). While many feel more confident online (Ofcom, 2023; Valkenburg & Peter, 2011), key conversations around privacy, identity, and boundaries are happening without adult oversight.

Children's understanding of online privacy is often confused, with both overestimating and underestimating the privacy risks they face (Livingstone et al., 2019). Children trust online platforms and assume their privacy is protected (Davis and James, 2013). They often misjudge which types of personal information are private, for instance, not differentiating between their address and favourite music, revealing a lack of awareness regarding the actual risks to their data (Moll et al., 2014). This confusion is compounded by the online disinhibition effect, where anonymity enables children to express themselves freely, often without considering the potential consequences (Suler, 2004).

Furthermore, children's understanding of privacy differs significantly from adults. They are less concerned with long-term risks like identity theft because these issues seem irrelevant (Steijn & Vedder, 2015; Steijn et al., 2016; Bowler et al., 2017). Instead, their desire for privacy is focused on maintaining control over their online representation, such as managing their profiles (Almansa et al., 2013; Lapenta & Jørgensen, 2015).

Children often appear detached from the broader consequences of risks (Pangrazio & Selwyn, 2018). This is reflected in children's awareness of algorithms, with many acknowledging them but not expressing strong opinions about algorithms using their data (Ofcom, 2024a). As children mature, they become more aware of algorithms and the influence of online advertising, particularly influencer marketing (Ofcom, 2024a). However, they still struggle to identify online advertising and remain vulnerable to deceptive marketing tactics (Ofcom, 2024a). While some children

express confidence in their ability to judge the authenticity of online content, this confidence does not always mean a good understanding of data use and risk (Ofcom, 2024a).

Furthermore, evidence suggests that safety mechanisms to protect children, such as age limits, can have the opposite effect and create curiosity rather than awareness or concern (Miyazaki et al., 2009). Finally, understanding and knowledge of risks do not necessarily translate to better safety practices (Macaulay et al., 2020), and the challenge for teachers is ensuring adolescents are using the knowledge appropriately to protect themselves.

2.4. Online Risk – SEN Students

Some young people are disproportionately susceptible to online risk (Notten & Nikken, 2014; El-Asam et al., 2022). It is concerning that recent research shows they spend more time online than their peers (El-Asam & Katz, 2018) and are likelier to share explicit content (Katz & El-Asam, 2020). Research has shown that harmful online content, such as pro-suicide material, is increasingly encountered by already vulnerable teenagers (Katz & El-Asam, 2020; Green et al., 2019).

Students with SEN may face increased online risk due to their specific challenges and a lack of tailored resources and support. While the Internet offers significant benefits, such as inclusion, social connection, and escapism (Katz & El-Asam, 2020; Zilka, 2017), it can also expose them to greater risks. These Students tend to experience fewer friendships and less acceptance (Pinto et al., 2018; Schwab et al., 2021). The social compensation theory suggests this pushes these students online to find meaningful connections (Sheldon, 2008; Grieve et al., 2017), potentially increasing their vulnerability to online risks

El-Asam et al. (2023) highlight the gap in assessing online vulnerabilities for children with SEN and the lack of adapted resources to support them. Resilience, a key protective factor, is often lower in these groups (Wisniewski et al., 2015; Vissenberg & d'Haenens, 2020), and lower resilience is linked to mental health difficulties (Wu et al., 2020), which can further exacerbate their vulnerability to online dangers.

2.5. Online Risk – DCYP: Language

While the above research looks at children with SEN, specific research about DCYP is limited. However, we can extrapolate key themes from other areas of research. DCYP face increased vulnerability online due to challenges related to digital literacy. Digital literacy extends beyond the ability to read and write, requiring higher-level thinking skills like critical evaluation and synthesis of online information (Leu et al., 2015; Liu, 2005). However, DCYP often have lower reading and comprehension than their hearing peers (Worsfold et al., 2018). As proficient reading skills are necessary to critically evaluate and use online information (Leu et al., 2015), DCYP are at a disadvantage.

Additionally, many DCYP experience delays in receptive and expressive language (Marschark et al., 2015a; Lund, 2016; Walker et al., 2019; Esbensen & Thomsen, 2021), limiting their ability to understand what others are saying online and assess the validity of online sources while simultaneously affecting how they communicate online and how others may understand them. Repeated negative interactions online can have a negative effect on well-being (Valkenburg & Peter, 2011).

El-Asam and Katz include DCYP in their study ‘Refuge and Risk’ (2020), with 3% of their participants having hearing loss. They recognised that DCYP may have a reduced ability to mitigate risks and difficulties accessing e-safety information. However, the students self-selected hearing loss, and the authors did not note the level or type of Deafness. Furthermore, whilst this paper recognises the vulnerability, there were limited suggestions on how these problems can be practically solved.

2.6. Online Risk – DCYP: BSL Users

There is a notable gap in the research of DCYP, whose first language is British Sign Language (BSL). While it is recognised that BSL users may encounter difficulties in accessing e-safety information and require resources translated into BSL (NSPCC, 2024), there is currently limited availability of e-safety resources explicitly tailored to the needs of the Deaf community. A small number of BSL-specific resources, such as those provided by Sign Health and Deaf Zone, do exist.

Recent studies have explored the online experiences of adult sign language users, focusing on both accessibility in consuming and creating content. Mack et al. (2020) found that American Sign Language (ASL) users often share content in written

English despite their preference for communicating in sign language. These users face significant barriers when accessing content, particularly with absent subtitles. They encounter practical difficulties in uploading signed videos, such as recording two-handed signing on a phone camera and providing subtitles for viewers. Similarly, Cao et al. (2023) identified comparable challenges in China with subtitling, misinterpretation of sign language, and the stereotyping of sign language users.

Despite not including adolescents in these studies, their findings highlight difficulties for Deaf individuals who use sign languages. DCYP who use BSL may encounter similar challenges faced by children with English as an Additional Language (EAL), necessitating a more tailored approach to ensure equal access to online resources and safety information. EAL students are vulnerable to online risks due to their language needs (El-Asam & Katz, 2018; Katz & El-Asam, 2020; El-Asam et al., 2023), so DCYP BSL users may experience compounded vulnerabilities.

2.7. Online Risk – DCYP: Theory of Mind

Theory of Mind (ToM), the ability to attribute thoughts, behaviours, and intentions to others, is crucial for recognising potentially harmful situations (Garfield, Peterson, & Perry, 2001). Delays in ToM can limit a child's social understanding and ability to interpret others' actions (Marschark et al., 2019). In DCYP, ToM is typically assessed through false belief tasks. While the reliability of these assessments is debated (Begby, 2023), research agrees that early language exposure plays a key role in ToM development (Peterson & Siegal, 2000; Woolfe et al., 2002). Deaf children with Deaf parents tend to have stronger ToM skills than those with hearing parents (Marschark et al., 2019), and since over 95% of DCYP are born to hearing parents (Marschark et al., 2015), poor ToM is common in this group.

DCYP with limited ToM may fail to recognise when others' behaviour is suspicious or inappropriate (Peterson & Siegal, 2000). Although this paper focuses on face-to-face interactions, these vulnerabilities could be applied to online situations such as phishing, scams and exploitation. Additionally, Screens may prohibit DCYP from clearly interpreting nonverbal cues such as body language or facial expressions online, which are crucial for recognising distress or discomfort in others (Woolfe et al., 2002). This inability to detect subtle signals can leave them vulnerable in risky

situations, as they cannot adequately gauge whether their actions or those of others are dangerous.

ToM is also linked to empathy. With poor empathy, DCYP may fail to recognise when someone is in distress or when they are being manipulated, further jeopardising their safety and the safety of others (Peterson & Siegal, 2000). For DCYP, interventions must explicitly recognise these vulnerabilities and target skills to overcome them. Montreuil and Malikin (2021) found integrating ToM and emotional regulation in interventions a successful approach to cyberbullying. However, the interventions were reactive once cyberbullying had occurred. A focus on pre-emptive strategies and education is important in e-safety.

2.8. Education and Parents

Parents of children with SEN often struggle to support their e-safety needs due to limited access to consistent, tailored guidance (Livingstone et al., 2017). The NSPCC (2018) follow-up to the Byron Review found many parents felt unprepared, citing a lack of knowledge, confidence, and difficulties using parental controls.

Parents of children with SEN report that while schools teach practical skills like bookmarking or blocking messages, deeper understanding of online risks is often lacking (Livingstone et al., 2011). Digital literacy has traditionally focused more on technology skills than on safety or managing risk (Cihak et al., 2015). A shortage of tailored resources leaves these children more exposed to risks like radicalisation and exploitation (Badillo-Urquiola et al., 2017). The Glaring Gap report found professionals were unaware of what vulnerable children were doing online, underestimated the range of risks, and relied on personal parenting experience to educate them (El-Asam et al., 2023).

Students with SEN needs, including DCYP, require specialised programs that balance their unique needs while explicitly providing the tools for navigating online risks (Good & Fang, 2015). In response to these challenges, recent initiatives such as the UK’s media literacy strategy, "A Positive Vision for Media Literacy,” emphasise the need for more consistent and comprehensive digital literacy education for both educators and particularly those with SEN, to better equip them to handle online risks (Ofcom, 2024c). Is this response too little, too late?

2.9. Deaf Kidz Defenders

The Deaf Kidz International (DKI) DKD program is a timely and targeted response to the lack of e-safety resources for DCYP. Its pilot was conducted in 10 Deaf schools across Pakistan and South Africa with 620 DCYP (Thomas, 2022). However, differences between these contexts and the UK may influence the program's effectiveness and adaptability for the UK.

While the DKD program addresses broader safeguarding themes, its core aim is to build resilience and protective strategies in DCYP, both online and offline (Thomas, 2022). It uses visual materials through games, animations, simulations, and teacher-led sessions. Visual learning is particularly effective for DCYP (Marschark & Knoors, 2012), supporting accessibility regardless of language proficiency. The integration of repetition and over-learning aligns with cognitive theories like Ebbinghaus' forgetting curve (1913), helping reinforce and embed key messages. Engaging content through games and teacher-led follow-ups enhances retention and supports positive learning outcomes (Abades-Barclay & Banaji, 2024; Philips et al., 2020).

A key limitation of the study is the absence of long-term assessment. The pilot included only a single post-assessment, with no follow-up to measure sustained behaviour change. Incorporating follow-up assessments would provide a clearer picture of the program's lasting impact. Testing the program in different countries, including the UK, would help assess its adaptability to varied contexts and needs.

In the UK, newborn hearing screening is well-established and universally implemented; children are diagnosed early, allowing for early intervention. Conversely, hearing screening programs in South Africa and Pakistan are still under development and access can be hindered by cost, geographical location and accessibility issues (Friedrich et al., 2012; Scheepers et al., 2014; Mahmood et al., 2020). Thomas (2022) notes that mixed-age classrooms were typical in the pilot study due to late diagnoses or late enrolment in the Deaf schools. These disparities in early diagnosis and intervention mean the DCYP involved in the studies may be distinctly different and may affect the success of the DKD program.

Internet exposure from a young age in the UK is normal (Ofcom, 2024a). However, internet access is less widespread in South Africa and Pakistan, particularly in rural areas, where infrastructure and cost restrict access (UNICEF, 2020). Whilst

connectivity increases, the need for e-safety programmes becomes a priority. Earlier and more consistent exposure to the internet may affect the DCYP’s awareness of e-safety themes and their interaction with the DKD program in this study.

In the UK, the safeguarding curriculum, including e-safety, is embedded within the Personal, Social, Health and Economic Education (PHSE) framework. UK teachers have regular safeguarding training and procedures for safeguarding disclosures. In contrast, Thomas (2022) highlights that some schools had previously attempted to teach safeguarding content, but it was ineffective and inconsistent; some teachers were unconfident and local curricula lacked emphasis on online abuse. It would follow that previous safeguarding education in the UK will mean the DCYP in this cohort have a better understanding of e-safety themes.

2.10. Gaps in the Research and Justification for the Study

While it is acknowledged that children with SEN face vulnerabilities regarding e-safety, limited research specifically addresses these concerns for DCYP. This study aims to assess DCYP's unique vulnerabilities in relation to e-safety to contribute to a growing understanding of their needs in this area.

There is also a gap in research regarding the role of professionals in safeguarding DCYP. This study seeks to explore current practices in the field, identify potential best practices, and gauge professionals' perceptions of DCYP's vulnerabilities in e-safety.

This study uses the DKD program to evaluate its applicability and effectiveness in the UK context. The research will explore whether the program resonates with UK-based DCYP, who are familiar with the internet, gaming, and digital platforms, and whether the safeguarding messages align with UK school frameworks. Additionally, it will assess whether the visual nature of the program's resources is effective for DCYP in the UK.

3. Methodology

This chapter sets out the design methodology for this study. Detailing participants, research methods and ethical considerations.

3.1. Research Methods

Research methods typically fall into three categories: quantitative, qualitative, and mixed methods, each with distinct strengths and limitations (Ward & Delamont, 2020). Researchers must carefully select the most suitable method based on the research questions, as each approach yields different outcomes (Thomas, 2023). Clear research questions guide the methodology, ensuring the most effective method is used (Cohen et al., 2017).

Qualitative research explores phenomena through non-numerical data, such as interviews, observations, and focus groups, enabling deep insights into complex issues (Creswell & Poth, 2017). It considers contextual influences during data analysis (Merriam, 2009), but its focus on small, non-representative samples can limit replicability (Silverman, 2013). Qualitative methods are flexible and responsive to emerging ideas (Denzin & Lincoln, 2011), though they are susceptible to researcher bias (Bryman, 2016) and can be resource-intensive (Creswell & Poth, 2017).

Quantitative research involving numerical data collection through surveys, questionnaires, and experiments is valued for its objectivity, replicability, and statistical analysis capabilities (Bryman, 2016). It allows large-scale data collection with randomised sampling (Creswell, 2014) but can lack depth and fails to address individual variation (Silverman, 2013). Once data collection tools are chosen, they cannot be adjusted to accommodate new insights (Bryman, 2016). However, quantitative research is efficient, cost-effective, and accessible to large participant groups, particularly through online surveys (Fowler, 2014).

Mixed methods combine qualitative and quantitative approaches to leverage both strengths, offering a more comprehensive understanding of the research focus (Creswell & Plano Clark, 2017).

3.2. Research Design

This research project aims to address the need for a program specifically designed for DCYP to build skills in e-safety. The study adopts an action research approach, introduced by Kurt Lewin in his seminal research (1946), as a collaborative model to combine research and action in a cyclical process to improve professional practice (Burton et al., 2014). Action research allows practitioners to identify problems through their professional experience and use research to find solutions, making it particularly popular in social sciences and educational research (Burton et al., 2014). This approach facilitates the collection of primary data on a small scale in the researcher's place of work (Dawson, 2019). The motivation behind this research stems from a genuine concern about DCYP's vulnerability and lack of e-safety skills, which are not addressed in mainstream PHSE lessons. The researcher's passion is driven by the issue's relevance to their everyday practice. Action research allows for real-time observation, investigation, and resolution of a problem (George, 2023).

A mixed-methods approach was selected to comprehensively explore the research questions. The research was split into two strands for ease of tracking. Strand one included quantitative and qualitative data via semi-structured interviews of scenario-based questions and observations with students before and after completing the DKD program. Strand two included both quantitative and qualitative data from professionals via an online survey. Scenario-based assessment tools have proven effective in similar studies (Thomas, 2022; Abades-Barclay & Banaji, 2024).

3.3. Triangulation

A mixed-methods approach facilitates triangulation, enhancing the reliability of results by integrating and comparing both quantitative and qualitative data to validate responses to the research questions (Tashakkori & Teddlie, 2010). The combination of a questionnaire for professionals, observations and pre- and post-program semi-structured interviews enabled an in-depth evaluation of whether the DKD scheme of work and games were suitable for the UK context. This adaptable approach allows the researcher to explore multiple perspectives and methods to address the research problem (Creswell & Plano Clark, 2017). Triangulation strengthens the validity of the findings and mitigates the limitations associated with using a single method.

3.4. Research Questions

Well-defined research questions provide structure to the study and serve as a framework to guide the research process. While these questions may evolve as the research progresses, the questions should inform and direct the methodology (Thomas, 2023). The research questions are as follows:

1. What is the level of awareness of e-safety principles among DCYP?

2. What are professionals' perceptions regarding the e-safety of DCYP?

3. Does the DKD program address the specific e-safety needs of DCYP in the UK?

3.5. Ethics

Ethical considerations are fundamental to the success and integrity of any research project. While they can initially appear daunting, ethical guidelines ensure that researchers consider the potential impact of their work on participants. Ethics should be integral throughout the research process, not merely a formality after gaining ethical approval (British Educational Research Association (BERA), 2024). In this research, ethics are particularly crucial as e-safety is a sensitive topic involving the vulnerabilities of the participants, their families, and professionals (Harris, 2017). The study also has the potential to reveal inequalities in access to online resources, which could marginalise certain groups within the research findings (Van Dijk, 2020). Therefore, ethical considerations are vital to ensuring the integrity and safety of both the research process and its participants.

This study adheres to the ethical guidelines of the University of Hertfordshire (UH) and BERA (2024). An EC1 form was submitted to gain ethical approval, ensuring the ethical collection, storage, and presentation of data while maintaining participant anonymity. The study was subsequently approved by the University of Hertfordshire Health, Science, Engineering, and Technology Ethics Committee with Delegated Authority, with the protocol number SLE/PGT/CP/06202 (Appendix A). Strand one involved obtaining parental consent to access data collected from the DKD program via an EC4 form (Appendix B). Strand two required an EC3 form to obtain informed consent before data collection from the online platform (Appendix D). Both strands also required EC6 forms, which explained the research's purposes, risks, and

potential benefits (Appendix C and E). Informed consent is essential to respecting participants' autonomy and fulfilling ethical guidelines (Shah et al., 2018). To comply with UH and BERA guidelines (2024), data collection was conducted using Microsoft Forms, and data was temporarily stored on the secure UH OneDrive.

3.6. Participants – DCYP

Participants were recruited from a RP within a mainstream school in South England. According to Gill (2020), qualitative research requires selecting participants who can provide insight into the phenomenon under study, and the nature of the study dictates the appropriate sample size. Six students from Key Stage 3 (ages 11 to 14) were selected for the study. The original DKD pilots involved students aged 5 to 15, with the majority being between 7 and 9 years old (Thomas, 2022). DKD was interested in exploring the program's applicability for DCYP in secondary schools across the UK.

Since earlier intervention is typically more effective, focusing on students in the early years of secondary school (Years 7-9) is ideal. By age 12, 100% of children are online (Ofcom, 2024a), making this program highly relevant for this age group. Additionally, the program aligns with the e-safety content of the Key Stage 3 PSHE curriculum. Access to students within the researcher's current workplace facilitated participant recruitment.

The inclusion criteria specified that students must have an Educational, Health, and Care Plan (EHCP) with Deafness identified as their primary need and be placed within the RP. The RP adopts a total communication approach, meaning students use a variety of communication methods, including BSL and Sign-Supported English (SSE) (Table 1).

Table 1- List of DCYP participant information

Student Identifier	Age	Year group	Amplification	BATOD better ear average	Communication method
1	14	9	Oticon Engage	Moderate	Aural
2	13	8	Oticon Engage	Moderate	Aural
3	13	8	Oticon Engage	Severe	SSE and Aural
4	13	9	Oticon Engage	Severe	Aural
5	12	7	Phonak Sky UP	Profound	BSL
6	11	7	Cochlea Nucleus 8	Profound	SSE and Aural

3.7. Participants – Professionals

Participants were recruited through professional bodies, including British Association of Teachers of the Deaf (BATOD) and British Association of Educational Audiologists (BAEA), and Heads of Service (HoS) across the UK who work with DCYP. This approach aimed to capture a comprehensive view of professional perspectives on the vulnerability of students and current practice in terms of e-safety. Questionnaires and surveys are effective tools for gauging individuals' thoughts and opinions (Hammond & Wellington, 2020). A link to the online survey was distributed to the professional bodies, with BATOD publishing the link and a covering letter in their online newsletter. A reminder was sent one week before the survey closed to encourage further participation.

3.8. Data Collection – DKD

Thomas (2022) developed a four-point scenario questionnaire to assess the effectiveness of the DKD program, using scenario-based assessments to measure resilience skills in children with lower literacy levels. This approach was informed by previous research on children's ability to recognise unsafe situations (Tutty, 2019), recall appropriate protective behaviours (Wurtele et al., 1986), and act on them (Drake et al., 2003). Similar studies have validated scenario-based questionnaires (Abades-Barclay & Banaji, 2024). Since Thomas (2022) had already tested this tool on DCYP students, we adopted this approach, ensuring the validity of the methods.

The questionnaire consisted of four scenario-based questions, each scored on a two-point scale, with a total possible score of eight (Appendix F). As in Thomas' (2022) study, assessments were conducted at two points: a baseline before the DKD program and at its conclusion. To measure lasting behavioural changes, we introduced a third assessment point one month after the program: the maintenance score.

During baseline testing, it became clear that the response options needed to be adjusted to include "say stop OR tell an adult," as some students provided these answers independently. The questionnaire was administered via one-to-one semi-structured interviews rather than a multiple-choice format. This method encouraged honest responses and minimised the likelihood of students selecting "I don't know" out of fear of being wrong. The semi-structured format also allowed for deeper insights into students' understanding of the scenarios (Hennink et al., 2020), fostering rapport and avoiding the feeling of being "tested."

After the baseline assessment, the DKD program was completed according to the provided lesson plans and online games, covering seven themes: "Trusted Adult," "Saying Stop," "Private Body Parts," "Pictures and Videos," "Online Bullying," and "Imposters" (Appendix H). Group sessions encouraged discussion, with additional topics like consent and respect addressed when relevant. Following the program, the post-assessment was conducted within a week, and the third assessment was completed one month later.

The assessments were conducted individually to avoid groupthink and ensure authentic responses (Patton, 2020). The researcher used minimal prompting to minimise bias, employing open-ended questions like "Could you tell me more?" or "What do you mean by that?" All responses were transcribed immediately after the sessions.

3.9. Data Collection – Professionals

The questionnaire was distributed through professional bodies and HoS, using Microsoft Forms in compliance with UH ethics guidelines. The questionnaire was carefully designed to capture insights into the perceived vulnerability of students, the confidence of ToDs and Ed. Auds in addressing internet safety, and their awareness of resources for further advice.

Response rates to online surveys can vary significantly and are influenced by factors such as the target audience, survey length, method, and timing (Couper, 2020). For surveys targeting specific audiences, response rates typically range from 20-50% (Couper, 2020). Research suggests lengthy questionnaires can lead to incomplete responses and participant fatigue (Tourangeau & Shin, 2020). To mitigate this, surveys should take approximately 10-15 minutes to complete to maximise response rates (Revilla & Höhne, 2020; Galesic & Bosnjak, 2020). Additionally, personalised communication, such as a welcome email and well-timed invitations, particularly mid-week, has been shown to improve response rates (Baruch & Holtom, 2021).

Considering these factors, a 13-item questionnaire was created, combining demographic, open-ended, and closed questions. The survey was designed to take approximately 10 minutes to complete and distributed mid-week with a welcome email and survey link (Appendix I). An identifier was assigned to each participant to ensure anonymity.

3.10. Pilot

Piloting the questionnaire was crucial to ensure its suitability and effectiveness, confirming that the questions were clear, unambiguous, and not misleading or confusing or could be interpreted as upsetting (Cohen, 2017). It also provided an opportunity to identify and correct any grammatical or spelling errors, as highlighted by willing volunteers. Additionally, the pilot phase ensured that the survey functioned correctly, was intuitive, and provided a user-friendly experience (Hammond & Wellington, 2021). As the scenario questionnaire has been used before, no pilot was needed for this aspect of the research (Thomas, 2022).

3.11. Data Analysis – DKD

All semi-structured interviews were transcribed, and the first step in the analysis process involved verifying the accuracy of these transcriptions. This process was labour-intensive and required meticulous attention to detail to ensure the data was transcribed verbatim, thus avoiding any inadvertent alterations (Creswell & Poth, 2017). The transcription process was essential to maintaining the accuracy of participant responses. The data was then organised and segmented to facilitate efficient coding and categorisation (Braun & Clarke, 2021). Coding, a key component of thematic analysis, enabled the identification of recurring themes and patterns

within the data (Ward & Delamont, 2020). Baseline interviews were scored using the four-point system developed by Thomas (2022). To thoroughly analyse the responses' richness and depth, the open-ended questions provided a foundation for thematic analysis (Saldana, 2021). This process was repeated for the subsequent two assessment points: completion of the DKD program and the maintenance assessment. Data was input into Excel to create visual representations, such as charts and diagrams.

Observations of students engaging with the games were conducted using the format established by Thomas (2022) (Appendix G). These observations provided valuable insights into student engagement with the resource, the discussions between students during the group sessions (e.g., while playing the games), and students' self-evaluations upon completion of the resource.

3.12. Data Analysis – Professionals

The responses were initially collected using Microsoft Forms software and subsequently transferred into Excel for further analysis. This allowed for efficient analysis of the quantitative data, with the creation of charts and diagrams to represent the data set visually. The open-ended responses were also transferred into Excel and coded in a manner consistent with the first strand of the research. The responses were categorised and segmented (Braun & Clarke, 2021) and further coded into specific themes and subthemes for comprehensive analysis.

3.13. Reflexivity

Reflexivity is essential in any research, particularly in small-scale action research, that is closely aligned with the researcher's professional practice and personal interests (Cohen et al., 2017). Ensuring that bias is minimised is crucial for maintaining the research validity, reliability, and ethical integrity. The researcher, a Qualified ToD, works in an RP for secondary-aged students, and the chosen topic is both of personal interest and identified as a significant issue in this cohort. This motivation drives a genuine desire to find pragmatic solutions to these challenges. Consequently, every effort has been made to mitigate unintended bias throughout the research process. Bias can emerge at any stage, and maintaining critical reflexivity enables the researcher to question their interpretations and recognise potential biases regularly. In particular, a clear coding framework has been employed

to ensure the data is not shaped by preconceived expectations (Braun & Clarke, 2021). The use of mixed methodology has facilitated gathering diverse responses from multiple sources (Creswell & Poth, 2017). Additionally, involving colleagues in reviewing the data, corroborating themes in the coding process, and agreeing on scoring has further minimised bias.

4. Results

This chapter presents findings from both the quantitative and qualitative datasets. It begins with data from student participation in the DKD program, followed by results from the professionals' survey. Surveys were conducted via Microsoft Forms, with manual coding and Excel used for data organisation. This approach supports a thorough exploration of the research questions.

4.1. DCYP Results

4.1.1. DCYP Access to Online Content

Students were asked about their access habits, including parental supervision, unsupervised access, and experiences with upsetting online content. The following three themes emerged.

Theme 1: Parental Supervision

Several students reported that their parents monitor their phone use, restricting content and usage times (Table 2).

Table 2- Student Examples of Parental Control

S6	"Parents won’t allow me to post my own videos."
S1	"Mum charges my phone in her room; I’m not allowed to have it overnight."
S6	"Parents say I’m not old enough for it (Discord)."
S3	"When I go to bed at night, I have to hand it to my mum; she doesn’t want me on it all night and gives it back in the morning."

Theme 2: Unsupervised Access

In contrast, other students indicated that they have access to their phones at all times, with limited supervision (Table 3).

Table 3 - Student Examples of Unrestricted Access

S5	"My phone is on me all day and night."
S2	"Sometimes if I wake up at night, I will look at it."
S4	"The only time I don't have it is if I've been grounded."
S2	"It's always on and always with me. I don't like not having it."

These two themes indicate a difference in parental supervision, which could be due to differences in parental knowledge, preferences or ability.

Theme 3: Experiences with Upsetting Online Content

Students were asked about their encounters with upsetting online content. All expressed exposure to negative interactions or disturbing material (Table 4).

Table 4 - Student Examples of Distressing Content or Interactions Online

S5	"Yes, people being unkind in a game – fighting, being rude and unkind."
S3	"I might get offended at videos against my religion"
S1	"I have seen pictures of dead people, like the rapper King Von. I was searching his murder and then I found pictures of dead bodies online."
S1	"People have had beef – one girl messaged, but I don't know who she was. She was angry at me, I don't know why. So I said something rude about her mum."
S6	"people can be unkind"
S2	" There is some stuff online, which can, you know, go over the line. Some people might find it upsetting." [The student was referring to dark humour she had encountered online.]
S4	"I try not to get upset by stuff as lots of its fake, but you do see videos about the war about children in it, and how… yeah that can upset me" (S4) [the student was referring to the Israel- Palestine conflict.]

It is striking that all students, without hesitation, recalled something in recent memory that they had seen which upset them.

All students were asked what sites they access. Table 5 details their responses. The most popular sites accessed by all students were TikTok and YouTube, and all used either WhatsApp or Snapchat to message friends.

Table 5 - Online Sites Students Report Accessing

	TikTok	Instagram	Snapchat	Facebook	Discord	WhatsApp	YouTube	Reddit
Student one	X		X		X		X	X
Student two	X		X			X	X	X
Student three	X					X	X	
Student four	X		X			X	X	X
Student five	X		X				X	
Student six	X					X	X	

4.1.2. DKD Quantitative Results

Table 6 presents the results from the four-question scenario questionnaire, which was used in a one-to-one semi-structured interview, with a possible top score of eight.

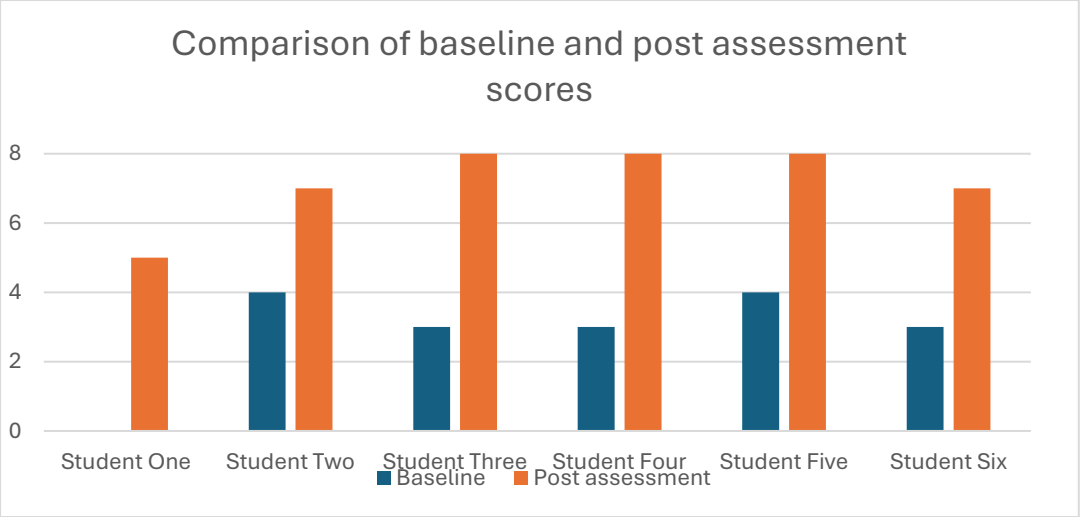
Table 6- Student Results at the Three Assessment Points

Student	Pre- scores baseline assessment	Completion assessment	Percentage increase	One month post-assessment	Percentage difference between baseline and 1m post-assessment
1	0/8	5/8	100	5/8	100
2	4/8	7/8	75	7/8	75
3	3/8	8/8	167	8/8	167
4	3/8	8/8	167	7/8	133
5	4/8	8/8	100	6/8	50
6	3/8	7/8	133	7/8	133
	Mean score: 2.8	Mean score: 7.2	The mean increase of 124	Mean score: 6.7	The mean increase of 110

The baseline scores revealed significant variability, reflecting differences in prior knowledge. All students scored below 50% across the four questions, with one scoring as low as 0%. The results indicate that, prior to the DKD program, the DCYPs' ability to recognise abuse and identify suitable protective behaviours was limited. The score of 0% from one student highlights the vulnerability of this cohort, as it demonstrates a lack of understanding regarding appropriate actions in unsafe situations.

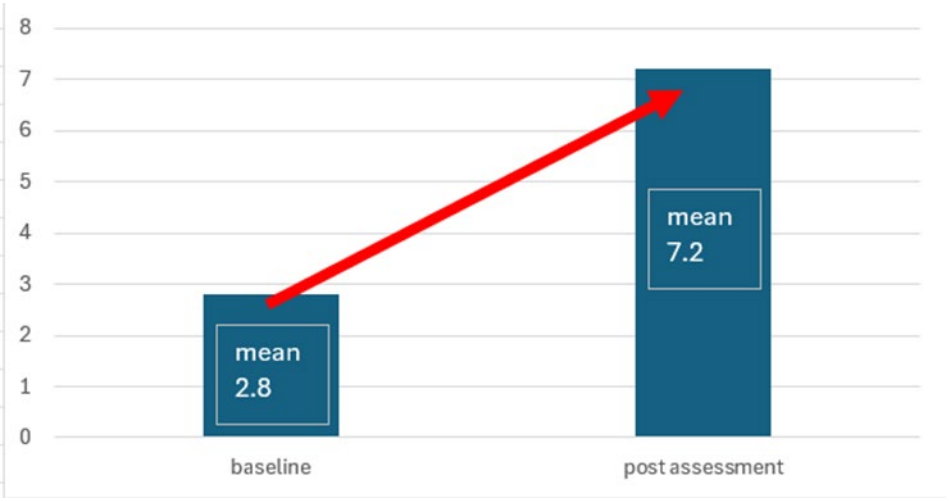
All students demonstrated a percentage increase between the baseline and post-completion assessments, with a mean increase of 124%. The post-completion assessment was conducted within one week of the program's conclusion. Statistical analysis using a paired t-test revealed that the observed score increase was highly significant ($P < 0.00005$). Consequently, the null hypothesis, which posited that the DKD teaching program had no impact, can be rejected.

Figure 1- Comparison of Baseline and Post Assessment Scores



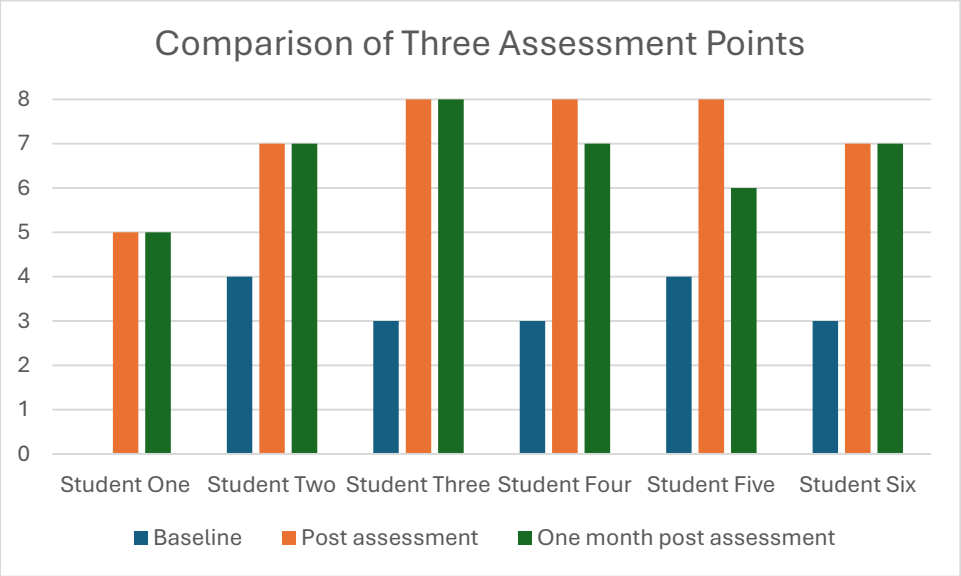
All students exhibited an improvement in their scores following the completion of the DKD program, with 83% demonstrating at least a twofold increase in their scores (Figure 1 & 2). Suggesting that, upon completing the program, students were better able to recognise abuse and identify appropriate protective behaviours in given safeguarding scenarios.

Figure 2- Comparison of Mean Scores Between Baseline and Post Assessment



We sought to evaluate whether the positive score increase was sustained over time. Recognising the need for repetition and overlearning among DCYP, the aim was to determine if the program contributed to the maintenance of these skills and whether behaviour change had occurred. A third assessment point was incorporated and conducted one month after the students had completed the DKD program. At this stage, all students demonstrated a continued percentage increase in their scores compared to the baseline assessments, indicating the retention of knowledge gained from the program (Figure 3).

Figure 3 - Comparison of Scores from All Three Assessment Points



Four students maintained their post-completion scores one month after the program, while two students experienced a decrease of one or two points; however, both still demonstrated an increase compared to their baseline scores. A paired t-test was conducted to compare the baseline and maintenance assessments to determine whether learning had been retained. The results remained highly significant ($p < 0.0005$).

A third t-test was performed to compare the post-intervention and maintenance test results, yielding a p-value greater than 0.05 ($p < 0.2$). This indicates no significant difference between the post-intervention and maintenance scores, further suggesting that the knowledge acquired through the program was effectively retained over one month (Figure 4).

Figure 4 - Comparison of the Mean Scores at All Three Assessment Points

4.1.3. DKD Qualitative Results

The qualitative data collected from the semi-structured interviews with students was coded into themes and subthemes. The findings are presented in chronological order of assessment points.

From the baseline questionnaire, four primary themes emerged.

Theme 1: Identification of Protective Behaviours

Some students demonstrated knowledge of protective behaviours, such as seeking help from trusted adults or refraining from sending inappropriate material online. Three students provided these responses, but these self-protective behaviours were not consistently applied across all four scenarios (Table 7).

Table 7 - Student Examples of Self-Protective Behaviours from Baseline Questionnaire

S5	"Tell teacher"
S2	"Go to mum or go to teacher"
S5	"No send picture"
S4	"I would block them"

Other students attempted to think of protective actions, although these included engagement with the perpetrator (Table 8). This indicates a recognition of the situation as potentially harmful but with limited awareness of safer alternatives.

Table 8 - Student Examples of Attempts at Protective Actions from Baseline Questionnaire

S6	"Give warning, like in school, like our teachers do – give a reminder, if they continue give a warning"
S3	"I would change the subject. Try and distract them"
S2	"If in the moment – try to change the subject…or ask the person to not talk about the subject"

However, again these responses were not consistent across all scenarios, suggesting this awareness was limited.

Theme 2: Engaging with Perpetrators

A more consistently displayed behaviour was engagement with perpetrators, either online or in person. These reactions were often expressed in jest or combative terms (Table 9).

Table 9 – Student Examples of Engagement with Perpetrators from Baseline Questionnaire

S1	"Send a middle finger picture to them – they asked for a picture *laughs*"
S6	"Send them a picture of someone famous or a cat! *laugh*"
S4	"I would just fight back"
S1	"I would protect myself and beat the living c*** out of them!"
S3	"Hit them back!"

These responses suggest that, rather than recognising the potential harm of these interactions, students were more likely to respond in ways that may escalate conflict and, as such, is very concerning.

Theme 3: Failure to Recognise Risk

Most students did not recognise the risks of opening messages from unknown individuals. This indicates a lack of awareness of potential online dangers (Table 10).

Table 10 – Student Examples of Opening Messages from Baseline Questionnaire

S1	"I would respond and be mean back…the only thing to do is respond"
S5	"Respond them maybe?"
S1	"Open the message and see what they want… if you don't, you're peak—that means weak

Moreover, students demonstrated a lack of recognition that strangers could target them (Table 11).

Table 11 – Student Examples of Lack of Recognition of Danger from Baseline Questionnaire

S3	"My friends would not ask this"
S1	"No one ever does that – they know I would beef them back and get them for it"
S3	"A random person would not have my number"
S3	“it would be really easy to see.”

Theme 4: Hesitation to Involve Adults

Two students said they would not tell a trusted adult. One student even questioned the efficacy of involving an adult, expressing doubts about their ability to intervene (Table 12).

Table 12 – Student Examples of Avoided a Trusted Adult from Baseline Questionnaire

S6	"I wouldn’t tell anyone"
S1	"What’s the point of telling a trusted adult? They don’t have the power to ban them, only admins can do that"
S3	"Don’t feel comfortable telling teacher"

These responses reflect a reluctance to engage with trusted adults, which may stem from a perceived lack of efficacy in reporting online safety concerns.

Four themes emerged from the post-assessment responses after completing the DKD scheme of work.

Theme 1: Engaging with an Appropriate Adult

Following completion of the DKD scheme, students consistently recognised the need to involve an appropriate adult in safeguarding situations. Notably, students began using language directly from the DKD program, reflecting the internalisation of key concepts (Table 13).

Table 13 – Student Examples of Telling a Trusted Adult Post Assessment Questionnaire

S6	"Tell my trusted adult"
S1	"Go to my brother; he is good at helping- my trusted adult"

This indicates that students were developing the ability to identify and engage with trusted adults as a reliable, self-protective response.

Theme 2: Saying Stop!

Another prominent theme in the DKD program is saying "stop," clearly communicating a desire for the harmful situation to end. Students demonstrated a consistent ability to recognise this as an appropriate response in safeguarding scenarios (Table 14).

Table 14 – Student Examples of Saying Stop in Post Assessment Questionnaire

S3	"Say stop!"
S4	"Say no"
S5	"Would say stop! I don’t want to be touched and tell a trusted adult"
S1	"Say no – go away!"

This theme underscores the students' growing understanding of asserting boundaries in harmful situations.

Theme 3: Evolving to Block and Not Responding to Messages

Following the DKD program, students showed an evolution in their responses to online threats, where they would block contact with unknown online perpetrators rather than engage (Table 15).

Table 15 – Student Examples of Protective Behaviours in Post Assessment Questionnaire

S5	"Report them and block them. Tell trusted adults"
S6	"Block them and tell my mum. I would not respond and I would report it to the site!"
S2	"Report it to the site and to a trusted adult and get offline. Block them"
S1	"I would not respond and ignore unknown numbers"

These responses extended to their behaviour regarding sending pictures online (Table 16).

Table 16 – Student Examples of Protective Behaviours Relating to Pictures in Post Assessment Questionnaire

S2	"Wouldn't reply back, would not send a picture"
S6	"I would say no, I would not send a picture"

Overall, protective behaviours became more consistent across all students, showing increased awareness in responding to potential threats.

Theme 4: True Behaviour Change

Two students acknowledged that, while they now understood the correct actions to take, they questioned whether they would consistently follow the advice given (Table 17).

Table 17 – Student Examples of Questionning if they Would Follow Advice in Post Assessment Questionnaire

S4	"Hmm, would I? {pause} Probably not, but I suppose I should."
S1	"Would want to respond but know I shouldn't."

Suggesting that while students had internalised the program's key messages, further reinforcement would be necessary to ensure that these protective behaviours are sustained over time.

Finally, the results from the maintenance assessment, conducted one month after the completion of the DKD program, were coded with the following findings.

Theme 1: Self-Protective Behaviours

Students continued to demonstrate self-protective behaviours, including engaging a trusted adult, saying "stop," blocking unknown contacts, and reporting inappropriate content to online platforms. The responses suggested that these protective strategies had been internalised and were consistently applied (Table 18).

Table 18 – Student Examples of Protective Behaviours from Maintenance Assessment

S5	"Say no and report it on the site"
S6	"Tell my trusted adult and block them"
S1	"Say stop and tell my adult, maybe my brother or parents"

These responses indicate that students were still able to identify appropriate self-protective actions in safeguarding situations.

Theme 2: Increased Confidence in Responses

Some students displayed an increased sense of confidence in their responses, using definitive language such as "definitely" and "immediately." These expressions suggest that students felt more assured in their ability to respond appropriately to potential risks (Table 19).

Table 19 – Student Examples of Increased Confidence from Maintenance Assessment

S4	"Definitely say no! You shouldn't share pictures. I would tell my trusted adult."
S3	"That is not okay – if it's a friend and it was hair, shoulder or hand – somewhere safe I'm okay with that – but if not, then shout no immediately and tell my mum or a teacher!"
S5	"Tell now! Shout no!"
S4	"Tell a trusted adult straight away"

These responses reflect a growing confidence in recognising harmful situations and acting accordingly.

Theme 3: Variability in Retained Behaviours

However, two students demonstrated a decrease in their maintenance scores compared to their post-program assessments. Specifically, S3 did not mention reporting or saying "stop" in one scenario, and S1 did not refer to telling a trusted adult, both of which they had previously indicated as appropriate responses. This variance highlights the importance of repetition and overlearning to reinforce key behaviours and ensure that these protective strategies remain ingrained over time. These findings suggest that, while the DKD program had a positive impact, the maintenance of these behaviours may require continued reinforcement and regular practice.

4.1.4. Observations

Observations were undertaken using Thomas' (2022) template. The results were coded into the main themes as follows.

Theme One: Engagement

All students consistently showed engagement and enjoyment of the DKD program. This was seen in their communication with each other, while playing the games, and in the discussion elements of the lessons (Table 20).

Table 20 – Student Examples of Positive Engagement with DKD Games

S1	"Can we play these again?"
S6	"I can beat your top score!"

Students gave their thoughts on the program (Table 21).

Table 21 – Student Thoughts on the DKD Program

S4	"the games are a good way to learn"
S1	"its more interesting, than just listening"

This shows that students found the program enjoyable and being engaged means that the program is more likely to be successful.

Theme two: Accessibility

The pilot study had previously been carried out with mainly primary-aged DCYP (Thomas, 2022), and one student did comment that the themes were messages they already knew (Table 22). This student was from year 9, the eldest DCYP in this cohort.

Table 22 – Student Example of Acknowledgement of Content Previously Covered

S4	"we've been told this before"

However, baseline testing suggested that all students would benefit from revisiting these themes and over-learning is necessary. The younger students recognised the benefits of the program (Table 23).

Table 23 – Student Examples of Benefits from the DKD Program

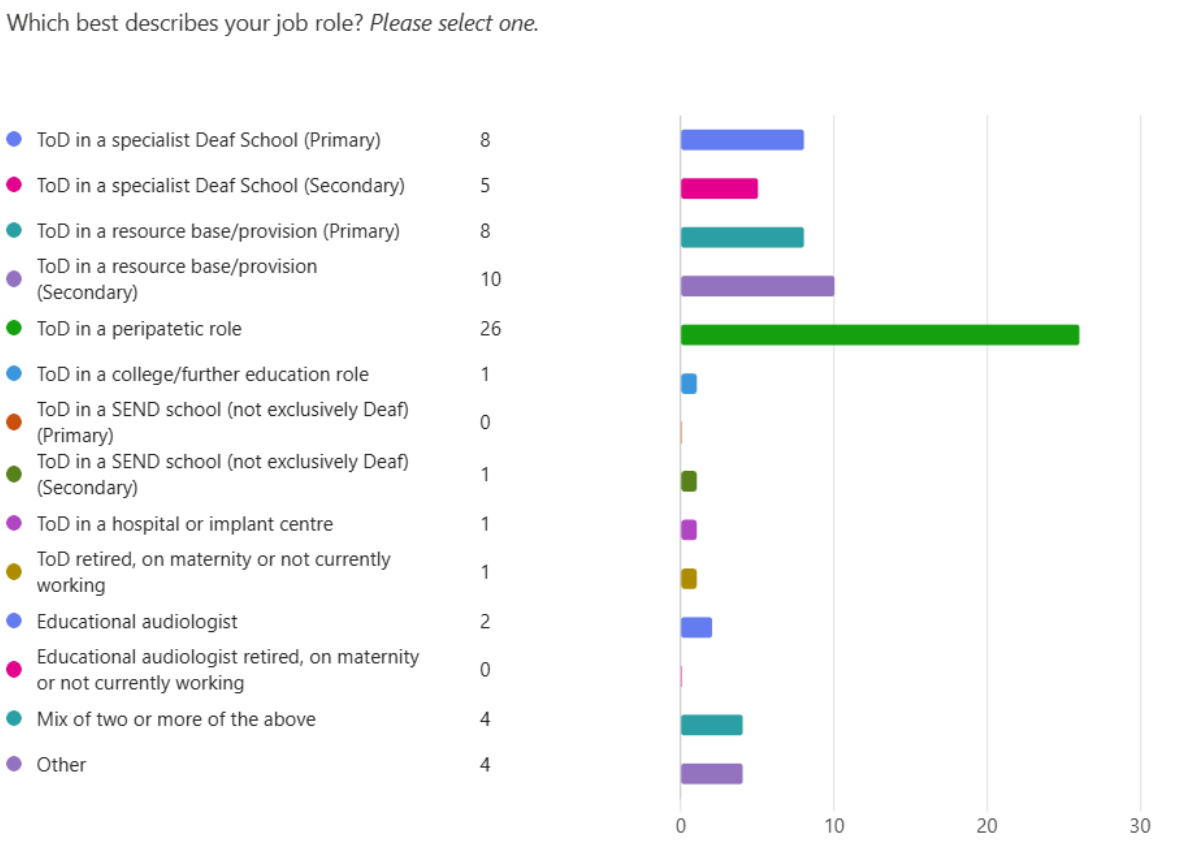
S5	"I have learned"
S6	"we have done similar before, but it helped to remind me in a more fun way"

4.2. Professional Results

4.2.1. Professional Survey Quantitative Results

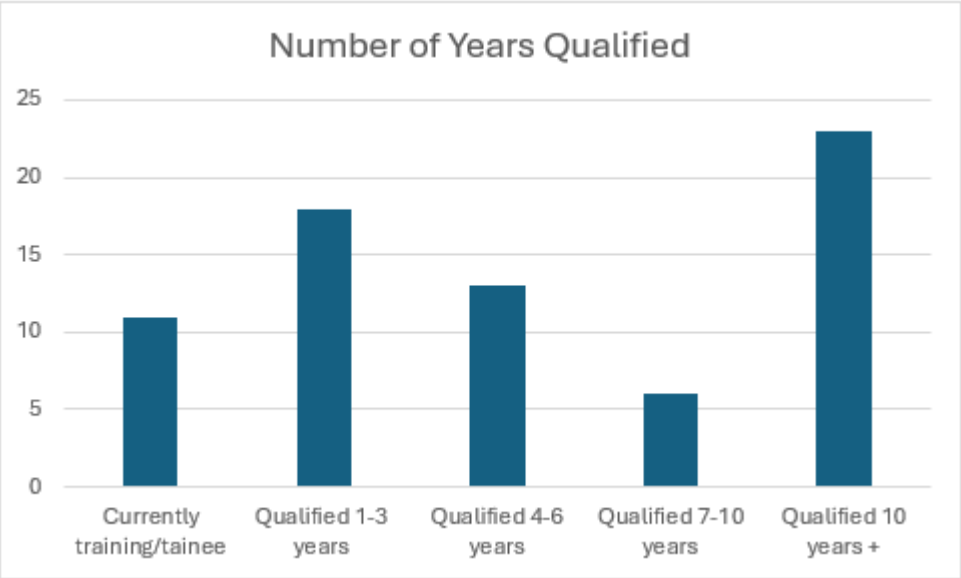
The survey was distributed through professional bodies, resulting in 71 responses from a diverse range of settings. The largest proportion (37%) were ToDs in peripatetic roles, which aligns with national statistics indicating that 52% of ToDs in the UK work primarily in peripatetic positions (NDCS, 2024). Among the four respondents categorised as "other," two identified as HoS, one a pastoral role, and one employed at a specialist Deaf school, encompassing both primary and secondary education (Figure 5).

Figure 5 – List of Professional Roles



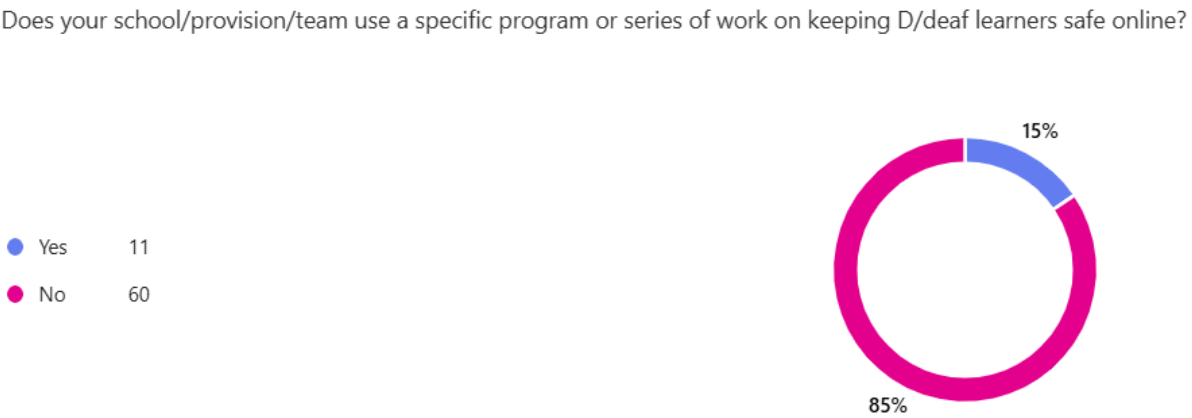
Respondents were asked how long they had been qualified. Of the 71 respondents, the majority were qualified, and 11 were in training. A notable proportion (32%) had been qualified for over ten years, highlighting that the survey reached many experienced professionals with extensive backgrounds in working with DCYP. This expertise contributes to the validity and reliability of the questionnaire results (Figure 6).

Figure 6 - Number of Years Qualified



Respondents were asked if their work uses a specific program for teaching DCYP e-safety skills (Figure 7).

Figure 7 -Provisions Used in Schools

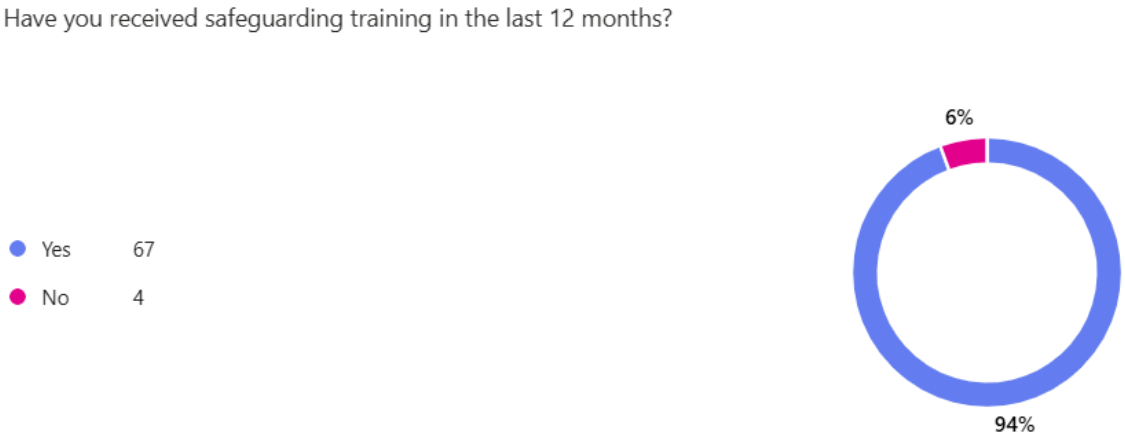


85% of respondents reported that they do not currently use any specific program. This highlights the need for such programs to be developed and implemented. Furthermore, 15% of those who indicated using a specific program were asked to name it. Of these 11 respondents, 8 were employed in Deaf schools (primary, secondary, or both). Several respondents referred to local authority programs or PHSE resources that had been adapted or heavily scaffolded to meet the needs of DCYP. However, none of the respondents identified a program specifically designed for DCYP, except one respondent who noted that their Deaf school had created their curriculum for teachers to follow. These findings show a clear gap in available

resources and emphasise the need for more programs, such as DKD, to be made commercially accessible across the UK.

A key finding by Thomas (2022) was the lack of safeguarding training and staff awareness. In light of this, we inquired whether our respondents had received safeguarding training within the past 12 months, with the expectation that 100% would, given the legal requirement set by the Department for Education (Figure 8).

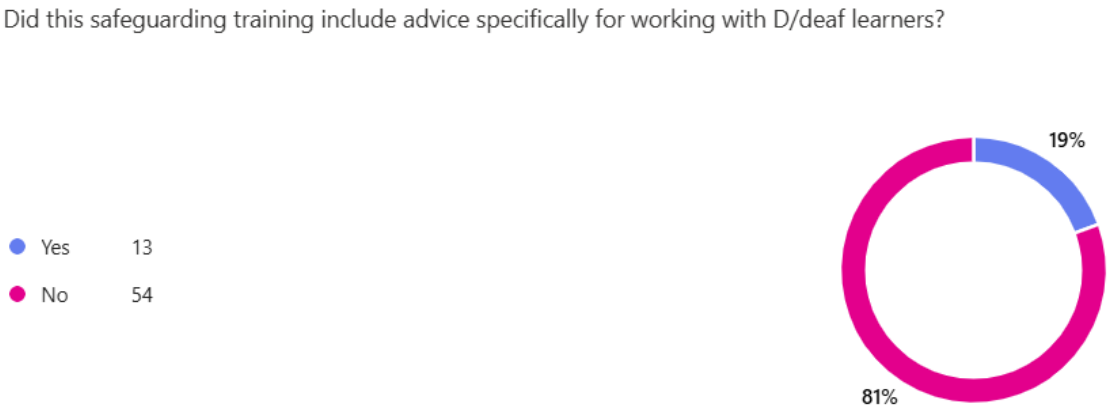
Figure 8 - Safeguarding Training



Four respondents stated they had not received safeguarding training in the last twelve months. One of them stated they were either retired, not currently working as a ToD or on maternity leave. The other three could have had this training under a different name or misunderstood the question. It is very concerning if those currently working have not had safeguarding training in the last twelve months.

The remaining 67 respondents were asked the following questions about that safeguarding training. Firstly, did this safeguarding training include specific advice on working with Deaf Learners? (Figure 9).

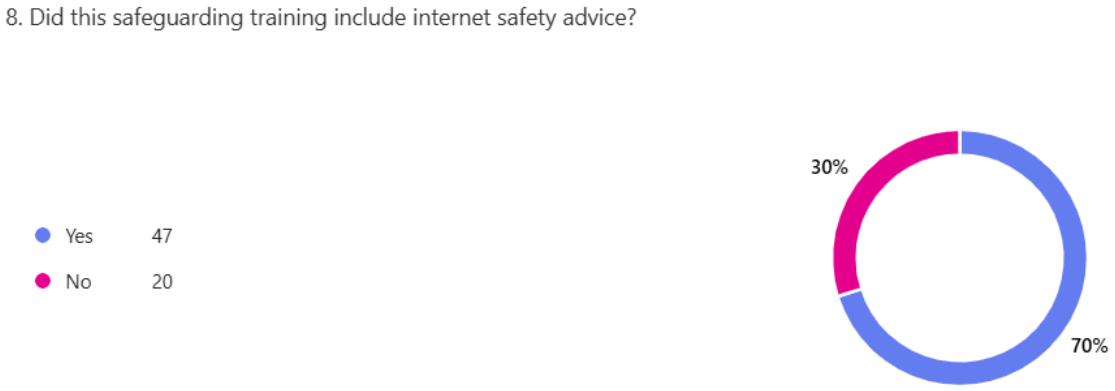
Figure 9 - DCYP Specific Advice



Of the 19% of respondents who reported having received specific DCYP safeguarding training, the majority were employed in Deaf schools (62%), where all students have hearing loss and training is specifically tailored to address the needs of these students. However, a higher percentage of positive responses might have been expected from professionals in other services. Notably, only 4 respondents (15%) from peripatetic services reported receiving DCYP specific safeguarding training, where you may expect training to be provided independently by sensory service teams or Heads of Service. Additionally, only 1 respondent (6%) from RPs indicated receiving DCYP specific training, where such training would typically be organised for the broader school staff. Given that RP's often serve a higher-than-average number of DCYP and promote inclusion, it would be beneficial for Deaf-specific strategies to be incorporated into training for all teaching staff. However, of the 67 eligible respondents, a significant majority (81%) reported that their training did not include any guidance on working with DCYP.

Secondly, respondents were asked if this safeguarding included any e-safety advice. The recent update by KISCE (Kent County Council, 2024) enhanced the emphasis on staff understanding and training to include e-safety. Given this, it was pleasing to see that 70% of respondents' training had included specific e-safety advice (Figure 10).

Figure 10 -Did Safeguarding include E-safety Advice



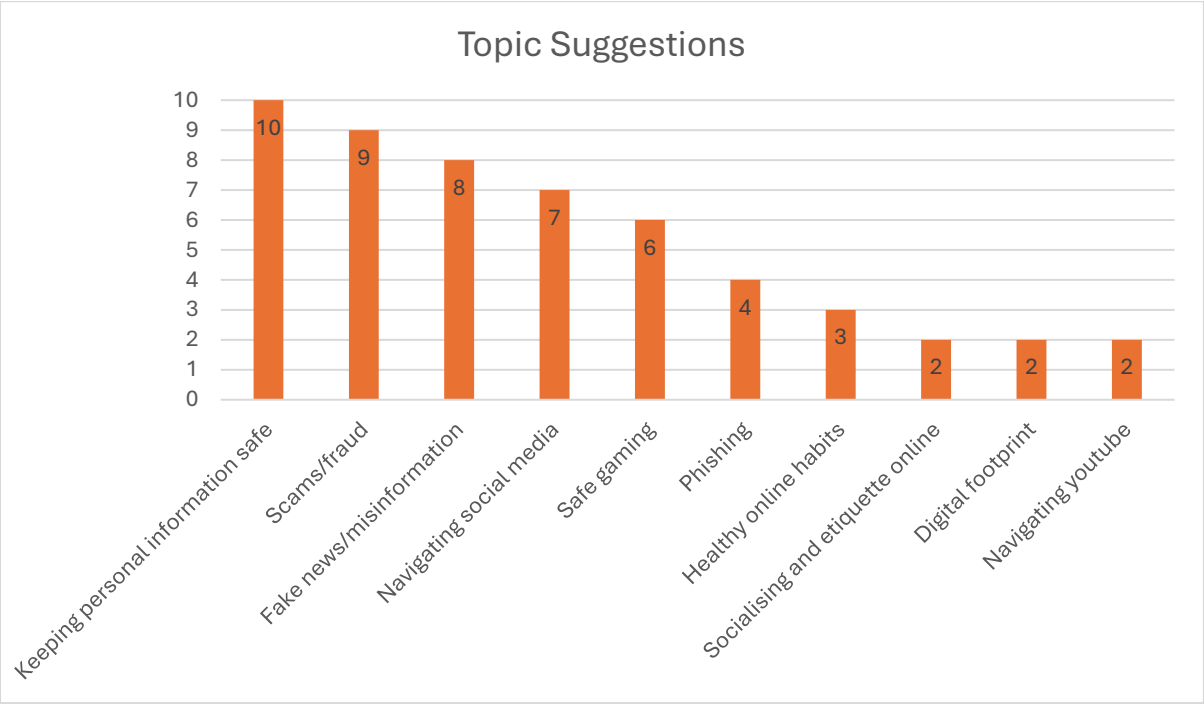
To assess the potential usefulness of the DKD program for professionals in the UK, respondents were asked to evaluate the relevance of the seven topics covered in the program. The majority of respondents deemed all topics to be beneficial. The topic of "Trusted Adults" was the most highly regarded, with 96% of professionals selecting it as useful. Conversely, the topics of "Saying Stop" and "Private Body Parts" were selected by 87% of professionals, making them the least popular. This difference may be attributed to the latter two topics being less frequently chosen by professionals in secondary school settings, suggesting that these topics are perceived as more relevant for primary school-aged children (Figure 11).

Figure 11 - DKD Topics by Perceived Usefulness

Respondents were asked to identify any additional topics they would like the DKD program to cover. The most frequently suggested topics are presented in the

following graph. Many of these suggestions are unsurprising given the current digital landscape, yet they provide valuable insight into the online challenges that professionals believe their DCYP are encountering. The most commonly recommended topic was teaching students how to protect and keep their personal information private, with 10 respondents highlighting this as a priority. This was followed by suggestions on addressing scams and financial fraud, which 9 respondents recommended (Figure 12).

Figure 12 - Topic Suggestions



The following topics were suggested once, by one individual but are worth mentioning as are all valid (Figure 13).

Figure 13 - Additional Suggestions Mentioned

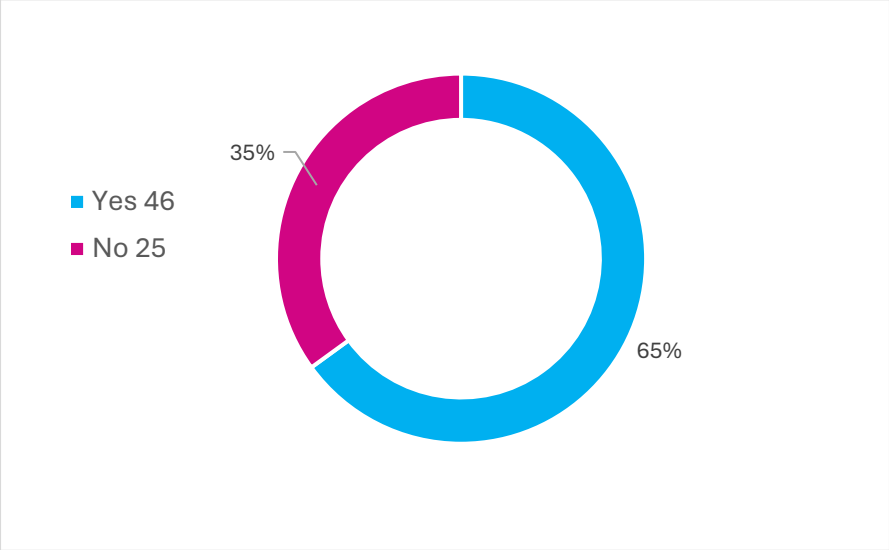
How to report concerns	1
Filters	1
Consent	1
Where to go for support	1
AI use	1
Grooming	1
Sexual exploitation online	1
Sexism	1
Homophobia	1
Radicalism	1

Respondents were asked to rate the perceived vulnerability of DCYP on a scale of 1-10, with one indicating "not vulnerable at all" and ten indicating "very vulnerable." The average rating was 7.7. Of the 71 respondents, 28% rated the vulnerability of the DCYP they work with as 10 (very vulnerable), while 76% rated it 7 or above. This indicates that professionals working with DCYP recognise the significant vulnerability of this group. Interestingly, the one respondent who selected a rating of 1 (indicating no vulnerability) was a trainee, and their safeguarding training did not include e-safety or topics specifically relevant to DCYP learners. It may suggest that this individual is early in their professional development and has not yet encountered these concerns in their work (Figure 14).

Figure 14 - Perceived Vulnerability of DCYP

Finally, respondents were asked about their confidence in answering internet safety questions or incidents (Figure 15). Over a third of the professionals in this survey expressed that they would not feel confident in their abilities to address such concerns effectively. Emphasising the need for targeted training and resources to enhance their confidence and competency in this critical area.

Figure 15 - Professional Confidence in Answering E-safety Safeguarding Questions



4.2.2. Professional Survey Qualitative Results

Professionals were asked to share their views on e-safety for DCYP, including the resources available and their confidence in addressing e-safety questions or incidents with the DCYP they work with. The responses, collected as qualitative free-text answers, were coded and analysed to extract the main themes.

Theme 1: Vulnerability of DCYP

Overall, professionals generally agreed that DCYP are particularly vulnerable when it comes to online safety. Respondent 34 noted that at least half of her caseload had either been vulnerable or engaged in inappropriate online behaviour. Respondents 29, 24, 46, and 66 all suggested that DCYP are more vulnerable in this area than their peers. This consensus highlights a shared recognition among professionals of the heightened vulnerability of DCYP with regard to online safety (Table 24).

Table 24 – Professional Examples of Vulnerability of DCYP

21	As most of my caseload are secondary students, i would imagine they are quite vulnerable,
29	Deaf CYP…in general I would think are more vulnerable than peers
24	Online safety needs to be a key consideration given the potential vulnerability of some Deaf learners.
34	at least 50% of my deaf learners have either been vulnerable online or done something inappropriate online
46	I think deaf learners are incredibly vulnerable
66	I would say deaf students are more vulnerable online

Respondents 22, 75, and 55 all remarked that DCYP with additional needs are particularly vulnerable, and these students may need extra support and tailored resources to develop e-safety skills (Table 25).

Table 25 – Professional Examples of DCYP with Additional Needs

22	I worry for my particularly vulnerable pupils online who have additional needs.
75	All of these students are deaf plus an additional need. I feel that these students are particularly vulnerable
55	Deaf learners with other needs are often more vulnerable

Respondents 27, 29, 65, and 66 reported variability in the vulnerability of their caseloads. DCYP are not a homogeneous group, with significant variation in factors such as language proficiency, residual hearing, consistency in aid usage, age of diagnosis, and socioeconomic status. These factors, among others, contribute to differences in the development of e-safety skills (Table 26).

Table 26 – Professional Examples of the Variability in Vulnerability

27	Vulnerability depends on the individual student
29	Levels of vulnerability vary hugely in my caseload of 50ish deaf CYP
65	There are some learners who are quite savvy online and some who are extremely vulnerable
66	Vulnerability varies hugely form student to student

The literature review discussed ToM as a key factor influencing the online safety of DCYP. Eight respondents specifically mentioned ToM as a critical aspect, with Respondent 10 highlighting the importance of recognising the intentions of others. Respondent 34 noted that scenario-based learning is particularly effective (Table 27).

Table 27 – Professional Examples of ToM

10	With the challenge that deaf children can have in understanding their safety and the intentions of others, its really important we are ensuring their safety
29	I think they are more vulnerable to things such as phishing and scams, as they may find it more challenging to read into the nuance of why something just doesn't quite feel right
30	Sometimes, I see pupils engaging or talking about games and cartoons online that are very inappropriate but because they are animated in a childish-style or parodying other children's shows, our pupils don't quite realise it is not really for them
34	They all have the same attitude that they are 'in the know' and that it doesn't necessarily apply to them
34	With deaf learners you have to give them scenarios for them to understand the process and consequences. However, it is impossible to give them every single possible scenario they could ever encounter
38	In my experience, D/deaf learners can be naïve and overly trusting, not recognising if a relationship is abusive or if there's an imbalance of power dynamics
51	Deaf children's theory of mind significantly impacts their ability to properly understand and adapt to the risks of being online
71	Many of our learners are accessing information that they do not necessarily understand and are often unable to decide what is real and fake

Receptive and expressive language skills are crucial in DCYP's ability to understand and process information online. These language challenges can impact online safety since DCYP often have lower vocabulary and literacy levels. Respondent 21 recognised that language proficiency significantly affects higher-level cognitive skills necessary for interpreting and understanding online content (Table 28).

Table 28 – Professional Examples of Language Needs

9	Very often not aware of the current trends and vocabulary being used by their peers
18	Many deaf learners struggle with literacy skills and need information presented in simple language with visuals to support text. New vocabulary needs to be clearly explained.
21	Those with language delays, they may not understand the language or the subtle nuances that older students use in their language and on social media.
41	There needs to be more BSL videos online as some deaf learners may struggle with reading English and understanding context
50	The language delay puts D/deaf learners at a higher level of vulnerability, particularly in their teenage years
38	They do not always have a way of communicating easily with adults around them

Incidental learning/lower world knowledge was identified as a factor with respondents 38, 47 and 56 recognised the importance of incidental learning in relation to e-safety (Table 29).

Table 29 – Professional Examples of Incidental Learning

34	Is this due to their lack of understanding due to being deaf and not completely following lessons
38	They miss out on/don't over-hear on the general chat that hearing children may benefit from, this results in reduced learning opportunities
46	Due to their inexperience of the wider world
47	Because Deaf children and young people miss incidental learning and can also lack world knowledge
56	Difficult to gauge how much a deaf learner can understand when they do not always learn incidentally and are more likely to misunderstand/interpret information over hearing peers

Three respondents identified social isolation as a significant factor affecting DCYP's ability to navigate the online world. As discussed in the literature review, the social compensation theory (Grieve et al., 2017) suggests that social isolation may motivate individuals to seek online connections (R15) (Table 30).

Table 30 – Professional Examples of Social Isolation

15	Isolated deaf children are at even more risk. Despite training they reach out to others over the internet
43	The impact of deaf learners feeling isolated and being isolated from school friends (i.e. travel to school) increases their online vulnerability
69	Missing out on spending time with family, playing games etc and the effect on social skills and communication

Theme 2: DCYP Access to the Internet

The next overarching theme identified was DCYP's access to the Internet and issues such as parental supervision.

Access to online materials and the time students spend online were identified as key concerns. Respondents noted that DCYP are accessing the Internet at younger ages (R10, R50, R63), raising concerns about the potential risks. Additionally, the effects of continuous exposure to online content (R69) and the manipulation of sources that appear to be child-friendly (R30) were highlighted as significant issues (Table 31).

Table 31- Professional Examples of Access

10	It is a concern that children are using technology and online interacting with others earlier
30	I see pupils engaging or talking about games and cartoons online that are very inappropriate but because they are animated in a childish-style or parodying other children's shows
34	at least 50% of my deaf learners have either been vulnerable online or done something inappropriate online
36	I have been involved with a number of serious safeguarding concerns related to Deaf learners and their online safety over the past ten years
50	They are more likely to have access to social media but not necessarily the understanding
63	Allow social media use at too young an age
69	They are inadvertently exposed to and the effect of watching low quality short videos endlessly

Several respondents (R17, R30, R64) highlighted parental supervision and the challenges parents face. One respondent noted that, with her younger cohort, she did not believe they had significant unsupervised internet access (R23). However, others expressed concerns that young children were gaining access to social media platforms at too early an age (R63) (Table 32).

Table 32 - Professional Examples of Parental Supervision

17	Hard for parents to monitor
23	I mainly work with primary aged children and children in special schools, so I don't think they have very much access to being online without adult supervision
30	I feel it can be difficult for families to monitor their child's activity online
54	Important to share online safety with parents too, how they can stay in control and keep their children safe with appropriate screen time
63	Lots of parents allow social media use at too young an age

Parental understanding and education are crucial for parents to effectively guide their children at home. Several respondents highlighted the importance of ToDs actively engaging with parents to support their children's online safety (R17, R36, R55, R63) (Table 33).

Table 33 - Professional Examples of Parental Understanding

17	Education for parents is essential
30	This can be due to language barrier at home
17	particularly for signing deaf children in families who don't sign…who can't communicate with their own families
36	It is a serious issue that needs addressing including making parents aware how vulnerable their children are
55	Support for parents of how to have conversation
63	Parents don't always know what is appropriate to let their children watch or how to support

Theme 3: Professionals' Training and Skills

The final theme encompassed comments relating to professional experiences, addressing issues such as access to suitable resources, training needs, and respondents' personal experiences and approaches to e-safety.

Respondents acknowledged the lack of specific resources available for DCYP (R15, R19, R45) and emphasised the need for these resources to be accessible to schools (R5). One respondent noted that many existing resources lack diversity and adequate representation of Deaf individuals (R55) (Table 34).

Table 34 – Professional Examples of Lack of Resources

5	I would feedback concerns to school and need to provide them with resources to support the individual
15	There is no specific…online safety…specific to D/deaf learners in my experience
19	There may resource available to educatiors…however, few resources are specifically aimed at young, deaf learners
45	Resources are lacking (particularly with BSL interpretation etc)
55	Often not enough diversity in the leading presenters

DCYP face challenges in accessing the available resources, as many PSHE lessons tend to be generic (R15) and are not always tailored to meet their specific needs (R38, R55). Respondent 75 highlighted that the curriculum's demands, coupled with the need for repetition of content, further complicates their ability to fully engage with these materials (Table 35).

Table 35 - Professional Examples of the Lack of Suitability of Content

15	In-school PSHE sessions do not take into consideration the more vulnerable…they are often very generic.
38	They do not always access the safety advice taught in schools well enough to have as good an understanding as their hearing peer group
51	{resources} needs lots of adaption
55	Not enough accessible content
75	There needs… a clear, consistent message needs to be communicated with them on a regular basis. But this is so difficult with the demands of the curriculum and everything else that is going on!

The importance of e-safety skills being taught to DCYP was recognised (Table 36).

Table 36 - Professional Examples of the Need for E-safety

6	It's important the D/deaf learner understandings the importance of keeping their information private
47	It is immensely important we teach internet safety
56	Our Deaf learners would definitely benefit from interventions within their schools to learn about online safety…Peri ToDs should be including this in their interventions with deaf learners

Several respondents voiced personal concerns about their ability to support students effectively. Respondent 36 shared their distress about being involved in numerous serious safeguarding issues, feeling the weight of responsibility. Similarly, Respondent 75 expressed concern about making critical decisions without proper support and guidance, underlining the emotional and professional strain caused by this gap in resources and training (Table 37).

Table 37 - Professional Examples of the Worry Involved in Supporting Students

15	It is a huge worry
22	I worry for my particularly vulnerable pupils
30	It is quite worrying
36	I have been involved with a number of serious safeguarding concerns related to Deaf learners and their online safety over the past ten years
75	Without knowing who to go to for specific advice for some of my learners…it does feel like I am the one making the final decisions about what they need and how to deliver it

Finally, several respondents commented on their training or lack of it, and R18 reported relying on their own parenting to guide them (Table 38).

Table 38 - Professional Examples of Lack of Training Available

18	I would use knowledge/information from my own parenting…this is a developing area of knowledge for me
30	I feel the gap is widening between my knowledge of the online world and the CYP's.
34	Would like some specific internet safety training
40	Would always value further training and resources
53	I feel I would benefit from more training
57	Specific guidance would always be appreciated
71	Support in this would be beneficial

5. Discussion

This chapter critically analyses the study's findings, examining how they align with or challenge existing research and theory. It interprets the results in relation to the research questions, explores implications for practice, and identifies areas for further research. Key themes from the data are discussed in the context of wider e-safety literature, alongside study limitations and recommendations for policy, practice, and future research.

5.1. DCYP Access to Online Content

The professional's survey highlighted that they encounter e-safety and safeguarding issues with their DCYP:

> "At least 50% of my deaf learners have either been vulnerable online or done something inappropriate online" R34

> "I have been involved with a number of serious safeguarding concerns related to Deaf learners and their online safety over the past ten years" R36

Professionals recognised that DCYP are accessing online platforms at younger ages and have increasing exposure to online content, which reflects the wider findings in the literature review (Ofcom, 2024a). This issue requires urgent attention if we are to keep DCYP safe online. There is also a clear understanding that parents have a critical role to play, yet parental capabilities and confidence vary significantly:

> "Parents don't always know what is appropriate to let their children watch or how to support" R63

> "particularly for signing deaf children in families who don't sign…who can't communicate with their own families" R17

> "with parents too, how they can stay in control and keep their children safe with appropriate screen time" R54

When speaking directly with the students, similar themes emerged. Parental control was inconsistent, with only a few students describing their use as being consistently monitored. But strikingly, every student could immediately recall something upsetting they had seen online. In their own way, they clearly expressed that they do not feel safe online and require more support navigating this complex digital world.

5.2. DCYP Vulnerability

The baseline testing revealed a concerning level of vulnerability among some students, with several scoring as low as 0/8, and all students scoring less than 50%. Given that students in the UK are required to receive some form of internet safety education through IT classes or PSHE throughout both primary and secondary education, these results raise significant questions about the effectiveness of these programs. Specifically, they highlight the potential gaps in retention and understanding, particularly for vulnerable groups such as DCYP. These findings underscore the urgent need for the development of targeted resources and programs that address the unique needs of DCYP, ensuring their safety in an increasingly digital world.

The baseline test results are comparable to the evaluation scores of the DKD program (Table 39).

Table 39 - Comparison of Thomas (2022) Data

	Mean	Standard Deviation	Median	Interquartile Range
Thomas (2022)	3.3	2.5	3.0	4.0
Woods (2024)	2.8	1.4	3.0	1.0

Notably, the mean score of the UK students was slightly lower than those of the cohort in the Thomas (2022) study, which included participants from Pakistan and South Africa. This difference is intriguing, considering the distinct characteristics of the cohorts. Specifically, the UK students had earlier diagnoses due to the introduction of the newborn screening program and received rehabilitation at a younger age. Additionally, these students had consistent access to the internet at home and school, and each owned a personal device with data access. In contrast, the students in Pakistan and South Africa likely faced limitations in internet access, which even affected the program's rollout (Thomas, 2022).

While some research suggests that exposure is key to developing digital literacy (Ng, 2012; Zilka, 2019), this primarily addresses practical skills rather than safeguarding capabilities. Evidence from the UK indicates that consistent exposure alone does not lead to improved e-safety skills for the following reasons:

- Lack of strong, consistent, and comprehensive digital skills curricula in the UK (Clarke, 2024; Philips et al., 2020; Livingstone et al., 2019)
- Variability in opportunities and needs among children (Livingstone et al., 2019; El-Asam et al., 2023)
- The digital divide (Livingstone & Helsper, 2007; Holmarsdottir, 2024)
- Limited parental knowledge and skills (Livingstone et al., 2017a; Prior & Renaud, 2023)
- Insufficient knowledge and skills among professionals, both through Initial Teacher Training (Walsh et al., 2023), online safeguarding (Sharp, 2018), and for those working with SEN students (El-Asam et al., 2023)
- The constantly evolving nature of the internet and the associated risks (Livingstone et al., 2019)
- Peer influences (Bullo & Shultz, 2022)
- A focus on knowledge-based learning rather than practical skills (Philips et al., 2020)

Thomas (2022) highlighted several factors contributing to the lower scores in the pilot program, including limited or no previous safeguarding education, ineffective delivery of key messages from schools and parents, cultural taboos, and communication barriers. Teachers also cited challenges such as the difficulty of incorporating the program into the school curriculum, constraints imposed by mandated curricula, inadequate or inaccessible resources, and the absence of online content within existing educational materials. These challenges align with those identified by professionals in the present UK-based study, suggesting common barriers in the delivery of e-safety education across diverse contexts.

Both the baseline testing and professional survey results highlight significant variation in e-safety skills among DCYP. As noted by respondents:

> “Levels of vulnerability vary hugely in my caseload of 50ish Deaf CYP” (R29)
>
> “Some learners are quite savvy online, while others are extremely vulnerable” (R65)

Thomas also noted variation amongst their DCYP. Our findings suggest that the severity of hearing loss alone does not explain this disparity. Deafness affects not only communication but also social and emotional health, language acquisition, and academic performance (Anderson et al., 2021). The BATOD average does not account for factors such as residual hearing, language abilities, cognitive ability, socio-economic status (SES), home language, exposure to the internet, or parental communication styles. These varied influences underscore the individuality of each DCYP (Marschark et al., 2018).

It is concerning that none of the students in this student group knew what an "imposter" was, and more than half were unaware of "privacy settings." To effectively protect themselves online, DCYP must have the necessary vocabulary and language skills related to digital literacy, particularly e-safety. Without knowing what an imposter is, how can students safeguard against one? The baseline results and professional survey responses suggest that many DCYP lack the language required to develop essential e-safety skills.

Professionals agree:

> "Many deaf learners struggle with literacy skills and need information presented in simple language with visuals to support text. New vocabulary needs to be clearly explained." (R18)
>
> "Those with language delays may not understand the language or the subtle nuances that older students use in their language and on social media." (R21)

Even with early diagnosis and intervention, DCYP often experience persistent language delays and disorders (Geers et al., 2016; Harris et al., 2022), which are strong predictors of poor outcomes in reading and comprehension (Marschark et al., 2015a). These language difficulties also affect expressive language, not just comprehension. Delays in expressive language can lead to misunderstandings, making it harder for DCYP to contribute online and leaving them more vulnerable to exploitation (Valkenburg & Peter, 2011).

Professionals note that DCYP with expressive language difficulties may also struggle to report incidents or express distress:

> "It can be hard if misunderstandings happen" (S2)

> "They do not always have a way of communicating easily with adults around them." (R38)

Broader research shows that DCYP may struggle to express negative emotions (Tsou et al., 2021), which can hinder their ability to communicate distress or issues online, an essential skill for e-safety.

As highlighted in the literature review and the professionals' questionnaire, ToM significantly impacts a DCYP's ability to understand others' thoughts and actions online. For example, one student described an online interaction with a stranger, saying,

> "One girl messaged, but I don't know who she was. She was angry at me, I don't know why?" (S1).

This reflects a failure to understand the motivations behind online interactions and a concern for DCYP with weaker ToM skills (Marschark et al., 2019). Many online threats are subtle and designed to deceive. DCYP may struggle to recognise manipulation or deception, as noted by professionals:

> "I think they are more vulnerable to things such as phishing and scams, as they may find it more challenging to read into the nuance of why something just doesn't quite feel right" (R29).

Without visual cues like facial expressions or body language, on which DCYP often rely heavily, DCYP may find it more difficult to detect scams or fraud. These were among the top subjects suggested by professionals for inclusion in an e-safety program for DCYP.

For example, one student questioned, "Why would they?" (S3) when asked about imposters, indicating a lack of awareness of the motivations behind online deception. This student also expressed confidence in being able to "spot" an imposter and claimed, "A stranger would not have my number" (S3), showing naivety and a lack of understanding of online risks.

Professionals noted that many DCYP minimise the risks of the online world and do not perceive themselves as vulnerable, which may be partly due to underdeveloped ToM skills.

5.3. Awareness and Knowledge Don’t Always Transfer to Action

Macaulay et al. (2020) found that even students with a strong awareness of online risks struggled to translate this knowledge into practical solutions to mitigate those risks. For DCYP who have not yet acquired this awareness, the challenge of protecting themselves becomes even more significant.

For example, Student 5 discussed using their card details on TikTok but lacked an understanding of how to safeguard this information, despite recognising the risk of being persuaded to make online purchases. This highlights that awareness of privacy concerns does not always lead to practical protective actions. While some research suggests that knowledge can improve behaviour (Chi et al., 2018), others have found that teens may not act on their knowledge or may even be more curious when presented with warnings (Miyazaki et al., 2009).

Student 2 mentioned being exposed to 'dark humour' on their feed, finding it upsetting but feeling powerless to stop it. Despite recognising the issue, they were unaware of how to control their exposure, aligning with Chi et al. (2018), who found that many teens do not understand data collection algorithms or their implications.

Two students noted that while they knew the recommended actions to stay safe online, they questioned whether they would follow them. This raises a critical question: How can we ensure lasting behaviour change? Overall, these findings suggest that awareness alone does not lead to action (Ogur et al., 2017; Shin & Kang, 2016), emphasizing the need for e-safety programs that not only increase knowledge but also encourage practical application to ensure DCYP are protected.

5.4. Gap In Knowledge/Resources

The professionals' survey revealed a significant gap in available e-safety resources tailored specifically for DCYP, with 85% of respondents reporting that they do not use a dedicated program for this cohort. It is reasonable to assume that DCYP are currently taught e-safety using resources intended for students without SEN. El-Asam et al. (2023) highlighted concerns among professionals regarding the absence of e-safety resources designed for SEN students in the UK.

The remaining 15% of professionals, all of whom worked in Deaf primary schools, reported using programs either developed in-house or heavily adapted from

mainstream resources. In follow-up research, twenty-two Deaf schools (primary and secondary) across the UK were contacted. Most of these institutions used either self-created resources or a combination of materials from Sign Health and Deaf Zone, which are aimed at BSL users. This further underscores the gap in provision for DCYP.

From the research, DKD appears to be the only currently available interactive program specifically designed for DCYP. The fact that Deaf schools are independently developing their own resources suggests an opportunity to consolidate and share this knowledge across institutions. By promoting the sharing of best practices and standardising resources, organisations like BATOD could play a crucial role in disseminating effective strategies and supporting nationwide consistency in the provision of e-safety education for DCYP.

In the absence of specialised guidance, many professionals are relying on personal experiences, such as their own parenting, to navigate the complexities of the online world. As one professional stated, “I would use knowledge/information from my own parenting…this is a developing area of knowledge for me” (R18), while another remarked, “Having my own children who are also Deaf enables me to keep up to date” (R37). This reliance on personal experience has been documented previously by El-Asam et al. (2023). However, our survey suggests that this reliance on personal sources of information leaves many professionals feeling uncertain and inadequate in addressing the challenges faced by DCYP in the online environment.

When asked whether their e-safety safeguarding training included specific advice tailored for DCYP, a significant majority—81%—reported receiving no such guidance. This lack of specialised training is not unique to the professionals working with DCYP. Similar patterns have been observed across various sectors, such as in healthcare (Owens, 2015), social care (Megele & Buzzi, 2020), mental health services (Rocks, 2020), and psychiatry (Aref-Adbid, 2020).

The survey also revealed widespread recognition of the need for more comprehensive training and support. The challenges faced by ToDs are not isolated. Sharp (2018) found similar inconsistencies among professionals working with children in care, highlighting the absence of formal, standardized tools to assess children’s needs and understanding accurately. El-Asam et al. (2023) further assert

that professionals possess only a fragmented understanding of online risks, leaving them increasingly ill-equipped to address the rapidly evolving digital landscape.

Most concerning, however, were the responses of two professionals (R9, R28) who indicated that they would only address online safety concerns with DCYP when specific issues arise in their caseloads. This reactive approach raises the risk that crucial issues may have already escalated by the time they are addressed. Professionals must incorporate proactive e-safety measures into their work with DCYP, as prevention is far more effective than intervention after a crisis (Throuvala et al., 2021).

5.5. Resources to Improve DCYP awareness and skills in e-safety

The DKD program was developed in response to a significant gap in available resources specifically tailored for DCYP. While the program encompasses broader safeguarding themes beyond e-safety, its core objective is to foster resilience and protective mechanisms in DCYP, a critical need in today's increasingly digital world (Thomas, 2022). The program has demonstrated clear success in achieving this objective. Post-assessment results revealed marked improvements, with all students showing gains from their baseline testing scores. Notably, three students achieved the highest possible score of 8/8 on the post-assessment, and all participants reported that they had learned valuable content from the program.

The statistical evidence supports the program’s effectiveness. Thomas (2022) reported a 112% increase in mean scores from baseline to post-assessment in the pilot study. In our own study, we observed a 157% increase in mean scores, though our participant number was significantly smaller. This data highlights the program’s ability to significantly enhance students' understanding of e-safety and protective measures in a relatively short time.

Students also expressed positive feedback regarding the program, with some even requesting to revisit the games. This enthusiastic response speaks to the engagement and enjoyment that the program fosters, which are key factors in ensuring that students internalise the content. Increasing students’ confidence and self-efficacy around e-safety is essential for building long-term protective behaviours (Jones et al., 2023). By equipping DCYP with the knowledge to recognise and

respond to online risks, the program helps ensure that these students are safer and empowered in their digital environments.

A key strength of the DKD program lies in its comprehensive teacher resources. The program includes keyword lists, discussion questions, and activities designed to assess students' prior knowledge and reinforce the relevant vocabulary. Retaining this vocabulary is essential for behaviour change, as it lays the foundation for the application of e-safety concepts in real-life situations (Jones et al., 2023). The flexibility of the program is also a significant advantage; it allows for the scaling of discussions and activities to meet the varying needs of students, making it a valuable resource for professionals working with DCYP. The questions were a good springboard to promote discussion. The evaluation of the ‘Common Sense Digital Citizenship’ program found that fostering open, exploratory discussions was more important to overall skills attainment than focusing on content and information delivery (Abades-Barclay & Banaji, 2024). Furthermore, the program's emphasis on scenario-based learning, including real-life relatable situations, has been shown to enhance students' ability to apply e-safety concepts effectively (Semilarski et al., 2021).

Supporting this, Abades-Barclay and Banaji (2024) found that scenario-based assessments are particularly effective in gauging practical e-safety and safeguarding skills. The DKD program incorporates these scenarios to great effect, helping students recognise when to involve a “safe adult” in safeguarding situations—a key protective behaviour in e-safety programs. Post-completion, all students recognised that they should call on a ‘safe adult’ in safeguarding situations similar to those in the questionnaire. This aligns with findings from Philips et al. (2020), who observed that students in the UK-based “Be Internet Legends” program showed the greatest improvement in their confidence to seek help from a safe adult after intervention. This result was explained in part due to the age of the participants. Other programs have struggled to show gains in this area (Jones et al., 2023), and it has been explained that students probably knew to tell an adult, but as we have seen, this does not always translate into action. Highlighting the importance of promoting protective behaviours at a young age, particularly as students transition to secondary school, where they are more vulnerable to online risks.

In addition to immediate gains, the program has demonstrated a lasting impact. The one-month follow-up assessment revealed that most students maintained their post-assessment scores, demonstrating knowledge retention over time. While discussions between assessments may have contributed to this outcome, studies indicate that integrating e-safety into broader, contextual discussions, instead of isolated lessons, enhances long-term retention and behaviour change (Philips et al., 2020). This aligns with the findings of the 'Common Sense Digital Citizenship' evaluation, which highlighted the importance of applying e-safety concepts to real-life contexts (Abades-Braclay & Banaji, 2024).

The DKD program's success highlights the value of embedding e-safety education across curricula and throughout key stages of education (Abades-Barclay & Banaji, 2024). Ideally, the program could form part of a spiral curriculum, revisited annually to reinforce and build on students' prior knowledge (Ireland & Mouthaan, 2020). There is significant potential for further expansion of the program, especially in areas such as fraud prevention, phishing, and misinformation topics highlighted by professionals working with DCYP in our survey. The program's flexibility also makes it suitable for diverse settings, such as Deaf youth clubs, where relaxed and informal environments may facilitate deeper learning and more significant behavioural changes, as observed in the 'Be Internet Legends' study (Philips et al., 2020). It would useful for other ToD in the UK and may be applicable to other vulnerable groups such as those with EAL.

In conclusion, the DKD program offers a comprehensive, engaging, and flexible approach to e-safety education for DCYP. Its demonstrated success in increasing knowledge and building protective skills, combined with its adaptability across different contexts, makes it a useful tool for addressing the identified gaps in e-safety for DCYP. The program not only meets a crucial need but also provides a model for how e-safety education can be effectively integrated into the broader curriculum to support the long-term wellbeing of DCYP.

5.6. Limitations and Areas for Further Study

This study, conducted as part of a Masters dissertation, encountered some limitations, primarily due to time constraints and the availability of participants. The sample size was relatively small, and while this enabled a thorough exploration of

the subject matter and more in-depth semi-structured interviews, expanding the study to include a larger number of DCYP participants would provide a larger cross-section of DCYP. In addition, this would allow us to discern whether the data and results are replicable across the UK.

Additionally, the study was confined to a single geographical area, with all participants attending the same RP. A broader geographic scope across the UK would be valuable to determine whether the findings are representative of DCYP nationwide. Furthermore, DKI may consider expanding the DKD program to other countries with strong internet access to explore opportunities for adaptation and broader implementation. This could also provide further insight into whether the results are applicable to DCYP in other areas with good access to the internet.

Finally, this study was unable to examine DCYP parents' perspectives on managing their children’s online use. Professionals have highlighted that parental understanding, control, and teaching of e-safety skills are paramount in DCYPS' lives, and further research in this area would add an additional layer of information to this subject.

The survey yielded a high response rate; however, only two responses were received from Ed. Aud’s. Given that most responses in this study came from England, it would be beneficial to seek participation from other regions within the UK to gain a more representative perspective. Future research could aim to obtain a larger and more diverse response from this professional group.

6. Conclusion

In conclusion, the internet has become an integral part of young people's lives, offering opportunities and challenges, particularly for those growing up with easy access in countries like the UK. While students with SEN are already recognised as being more vulnerable online (El-Asam & Katz, 2018; Katz & El-Asam, 2020; El-Asam et al., 2023), DCYP face additional challenges due to their unique language needs and the development of their ToM. Despite limited research specifically addressing the vulnerabilities of DCYP, it is clear that they too require targeted support to navigate the digital world.

Professionals in the field are increasingly aware of these vulnerabilities but express concern about their ability to provide effective support, mainly due to the lack of tailored e-safety resources and professional training. As DCYP gain earlier and more frequent access to the internet and personal devices, many Deaf Schools and educators have resorted to creating or adapting mainstream resources to meet these needs. However, there remains a significant gap in the sharing of knowledge among professionals and a clear shortage of resources specifically designed to support DCYP in the online space.

This issue is likely to grow as digital access becomes even more widespread, making it imperative to act now, before it is too late. Ensuring DCYP can safely navigate the online world is a critical concern, given their specific vulnerabilities. DKI has developed a potential solution in the form of a visual resource aimed at enhancing e-safety and safeguarding skills for DCYP and their educators. The program, which covers topics related to abuse recognition and self-protective behaviours, was trialled in an English RP for Key Stage 3 students. The results were promising, showing that the resource was accessible, improved recognition of abuse, and led to a sustained increase in self-protective thinking among participants.

Moving forward, it is essential to continue developing and expanding such resources, as well as promoting collaboration and sharing of knowledge among professionals, to ensure that DCYP are supported in developing the skills they need to navigate the online world safely.

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8. Appendices

Appendix A- EC1a Ethics Approval Notification

University of Hertfordshire UH

SOCIAL SCIENCES, ARTS AND HUMANITIES ECDA

ETHICS APPROVAL NOTIFICATION

TO	**Laura Anne Woods**
CC	**Dr Imran Mulla**
FROM	**Dr Ian Willcock, Social Sciences, Arts and Humanities ECDA Chair**
DATE	**08/11/2024**

Protocol number:	SLE/PGT/CP/06202
Title of study:	Deaf students and Internet Safety

Your application for ethics approval has been accepted and approved with the following conditions by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

No additional workers named

General conditions of approval:

Ethics approval has been granted subject to the standard conditions below:

Permissions: Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

External communications: Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

Invasive procedures: If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

Submission: Students must include this Approval Notification with their submission.

Validity:

This approval is valid:

From: 08/11/2024

To: 31/01/2025

Please note:

Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.
Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit form EC2.
Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

Failure to report adverse circumstance/s may be considered misconduct.
Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

Appendix B- EC4 Consent Form by Parents

University of Hertfordshire UH Ethics Committee

Internet Safety and Deaf Students: Strand One – Parental Consent

UNIVERSITY OF HERTFORDSHIRE

ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS

('ETHICS COMMITTEE')

FORM EC4

CONSENT FORM FOR STUDIES INVOLVING HUMAN PARTICIPANTS

FOR USE WHERE THE PROPOSED PARTICIPANTS ARE MINORS, OR ARE OTHERWISE UNABLE TO GIVE INFORMED CONSENT ON THEIR OWN BEHALF

I, the undersigned *[please give your name here, in BLOCK CAPITALS]*

…… ……

of *[please give contact details here, sufficient to enable the investigator to get in touch with you, such as a postal or email address]*

…… ……

hereby freely give approval for *[please give name of participant here, in BLOCK CAPITALS]*

.....

to take part in the study entitled

.....Deaf Students and Internet Safety.....

(UH Protocol number SLE/PGT/CP/06202)

1 I confirm that I have been given a Participant Information Sheet (a copy of which is attached to this form) giving particulars of the study, including its aim(s), methods and design, the names and contact details of key people and, as appropriate, the risks and potential benefits, how the information collected will be stored and for how long, and any plans for follow-up studies that might involve further approaches to participants. I have also been informed of how my personal information on this form will be stored and for how long. I have been given details of his/her involvement in the study. I have been told that in the event of any significant change to the aim(s) or design of the study I will be informed and asked to renew my consent for him/her to participate in it.

2 I have been assured that he/she may withdraw from the study, and that I may withdraw my permission for him/her to continue to be involved in the study, at any time without disadvantage to him/her or to myself or having to give a reason.

3 In giving my consent to participate in this study, I understand that voice, video or photo-recording will take place and I have been informed of how/whether this recording will be transmitted/displayed.

4 I have been told how information relating to him/her (data obtained in the course of the study, and data provided by me, or by him/her, about him/herself) will be handled: how it will be kept secure, who will have access to it, and how it will or may be used.

5 I understand that if there is any revelation of unlawful activity or any indication of non-medical circumstances that would or has put others at risk, the University may refer the matter to the appropriate authorities.

6 I declare that I am an appropriate person to give consent on his/her behalf, and that I am aware of my responsibility for protecting his/her interests.

Signature of person giving consent

……Date……

Relationship to participant

.....

Signature of (principal) investigator

.....Date……..

Name of (principal) investigator *[in BLOCK CAPITALS please]*

.....LAURA ANNE WOODS.....

Appendix C- EC6 Participant Information Sheet for Parents

University of Hertfordshire UH Ethics Committee

UNIVERSITY OF HERTFORDSHIRE

ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS ('ETHICS COMMITTEE')

FORM EC6: PARTICIPANT INFORMATION SHEET

1 **Title of study**

Deaf Students and Internet Safety

2 **Introduction**

Your child is being invited to take part in a study. Before you decide whether to do so, it is important that you understand the study that is being undertaken and what your and your child's involvement will include. Please take the time to read the following information carefully and discuss it with others if you wish. Do not hesitate to ask us anything that is not clear or for any further information you would like to help you make your decision. Please do take your time to decide whether or not you wish to take part. The University's regulation, UPR RE01, 'Studies Involving the Use of Human Participants' can be accessed via this link:

https://www.herts.ac.uk/about-us/governance/university-policies-and-regulations-uprs/uprs

(after accessing this website, scroll down to Letter S where you will find the regulation)

Thank you for reading this.

3 **What is the purpose of this study?**

To establish whether the Deaf Kidz Defender's internet safety program is useful in helping Deaf students in a resource base within the UK develop skills to help protect themselves from harm online and how this program may be improved to fit the needs of Deaf students within the UK.

4 **Do I have to take part?**

It is completely up to you whether or not you decide to take part in this study. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. Agreeing to join the study does not mean that you have to complete it. You are free to withdraw at any stage without giving a reason. A decision to withdraw at any time, or a decision not to take part at all, will not affect any treatment/care that you may receive (should this be relevant).

5 **Are there any age or other restrictions that may prevent me from participating?**

There are no restrictions on taking part, although your child will need to have an EHCP and have a place at an additionally resourced provision (ARP) within the UK to be eligible to participate in this study.

6 **How long will my part in the study take?**

If you decide to take part in this study, your child's data will be accessed from when they undertook the series of lessons in school on internet safety and played games on the Deaf Kidz Defenders program to consolidate the themes learned during the lesson. The data from this program will be anonymised and analysed over one term to assess the success of the program.

7 **What will happen to me if I take part?**

Your child's data will be anonymised and analysed to assess the effectiveness of the Deaf Kidz Defenders program.

8 **What are the possible disadvantages, risks or side effects of taking part?**

There are not any known risks from taking part in this study. Any information used will remain anonymous.

9 **What are the possible benefits of taking part?**

Your child's data will help to guide and inform further development of the Deaf Kids Defenders program within the UK.

10 **How will my taking part in this study be kept confidential?**

All personal data will be stored electronically in a secure, password protected file and destroyed at the end of the completed dissertation.

11 **What will happen to the data collected within this study?**

- The data collected will be stored electronically, in a password-protected environment, for 6 months, after which time it will be destroyed under secure conditions.
- The data will be anonymised prior to storage.

12 **Will the data be required for use in further studies?**

- The data will not be used in any further studies.

13 **Who has reviewed this study?**

This study has been reviewed by:

- The University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority

The UH protocol number is **SLE/PGT/CP/06202**

14 **Factors that might put others at risk**

Please note that if, during the study, any medical conditions or non-medical circumstances such as unlawful activity become apparent that might or had put others at risk, the University may refer the matter to the appropriate authorities and, under such circumstances, you will be withdrawn from the study.

15 **Who can I contact if I have any questions?**

If you would like further information or would like to discuss any details personally, please get in touch with me, by email: lwoods@swr.school

Although we hope it is not the case, if you have any complaints or concerns about any aspect of the way you have been approached or treated during the course of this study, please write to the University's Secretary and Registrar at the following address:

Secretary and Registrar

University of Hertfordshire

College Lane

Hatfield

Herts

AL10 9AB

Thank you very much for reading this information and giving consideration to taking part in this study.

Appendix D- EC3 Consent from for Professionals Survey

University of Hertfordshire UH Ethics Committee

Deaf Students and Internet Safety EC3 – Strand Two

UNIVERSITY OF HERTFORDSHIRE

ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS

('ETHICS COMMITTEE')

FORM EC3

CONSENT FORM FOR STUDIES INVOLVING HUMAN PARTICIPANTS

I, the undersigned *[please give your name here*, *in BLOCK CAPITALS]*

……..…

of *[please give contact details here, sufficient to enable the investigator to get in touch with you, such as a postal or email address]*

…..……

hereby freely agree to take part in the study entitled *[insert name of stu*dy *here]*

……Deaf Students and Internet Safety……..

(UH Protocol number **SLE/PGT/CP/06202**)

1 I confirm that I have been given a Participant Information Sheet (a copy of which is attached to this form) giving particulars of the study, including its aim(s), methods and design, the names and contact details of key people and, as appropriate, the risks and potential benefits, how the information collected will be stored and for how long, and any plans for follow-up studies that might involve further approaches to participants. I have also been informed of how my personal information on this form will be stored and for how long. I have been given details of my involvement in the study. I have been told that in the event of any significant change to the aim(s) or design of the study I will be informed, and asked to renew my consent to participate in it.

2 I have been assured that I may withdraw from the study at any time without disadvantage or having to give a reason.

3 I have been told how information relating to me (data obtained in the course of the study, and data provided by me about myself) will be handled: how it will be kept secure, who will have access to it, and how it will or may be used.

4 I understand that if there is any revelation of unlawful activity or any indication of non-medical circumstances that would or has put others at risk, the University may refer the matter to the appropriate authorities.

Signature of participant……..…Date……

Signature of (principal) investigator……Date……

Name of (principal) investigator

……LAURA ANNE WOODS……

Appendix E- EC6 Participant Information Sheet for Professionals

University of Hertfordshire UH Ethics Committee

UNIVERSITY OF HERTFORDSHIRE

ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS ('ETHICS COMMITTEE')
FORM EC6: PARTICIPANT INFORMATION SHEET

1 **Title of study**

Deaf Students and Internet Safety

2 **Introduction**

You are being asked to take part in this study. Before you decide whether to do so, it is important that you understand the study that is being undertaken and what your involvement will include. Please take the time to read the following information carefully and discuss it with others if you wish. Do not hesitate to ask us anything that is not clear or for any further information you would like to help you make your decision. Please do take your time to decide whether or not you wish to take part. The University's regulation, UPR RE01, 'Studies Involving the Use of Human Participants' can be accessed via this link:

https://www.herts.ac.uk/about-us/governance/university-policies-and-regulations-uprs/uprs

(after accessing this website, scroll down to Letter S where you will find the regulation)

Thank you for reading this.

3 **What is the purpose of this study?**

To establish whether the Deaf Kidz Defender's internet safety program would be useful for Teachers of the Deaf, within the UK. To help develop the program to suit the needs of issues that Teachers of the Deaf in the UK have come across.

4 **Do I have to take part?**

It is completely up to you whether or not you decide to take part in this study. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. Agreeing to join the study does not mean that you have to

complete it. You are free to withdraw at any stage without giving a reason. A decision to withdraw at any time, or a decision not to take part at all, will not affect any treatment/care that you may receive (should this be relevant).

5 **Are there any age or other restrictions that may prevent me from participating?**

There are no age restrictions on taking part, although you must be a qualified or training to be a Teacher of the Deaf within the UK.

6 **How long will my part in the study take?**

If you decide to take part in this study, you will be sent an email with an invite to complete an online questionnaire. The questionnaire will take approximately five minutes to complete.

7 **What will happen to me if I take part?**

If you decide to take part in this study, you will be sent an email with an invite to complete an online questionnaire. This questionnaire will ask questions regarding your work placement, how long you have been qualified and your current viewpoints on internet safety for Deaf students.

8 **What are the possible disadvantages, risks or side effects of taking part?**

There are not any known risks from taking part in this study. Any information used will remain anonymous.

9 **What are the possible benefits of taking part?**

You will be contributing to better understanding of Teachers' of the Deaf viewpoints and challenges when teaching internet safety. This information will help to inform how the Deaf Kidz Defenders program by Deaf Kidz International could be used in the UK.

10 **How will my taking part in this study be kept confidential?**

All personal data will be stored electronically in a secure, password protected file and destroyed at the end of the completed dissertation.

11 **Audio-visual material**

No audio-visual material was used in this study.

12 **What will happen to the data collected within this study?**

- The data collected will be stored electronically, in a password-protected environment, for 6 months, after which time it will be destroyed under secure conditions.
- The data will be anonymised prior to storage.

13 **Will the data be required for use in further studies?**

- The data will not be used in any further studies.

14 **Who has reviewed this study?**

This study has been reviewed by:

- The University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority

The UH protocol number is **SLE/PGT/CP/06202**

15 **Factors that might put others at risk**

Please note that if, during the study, any medical conditions or non-medical circumstances such as unlawful activity become apparent that might or had put others at risk, the University may refer the matter to the appropriate authorities and, under such circumstances, you will be withdrawn from the study.

16 **Who can I contact if I have any questions?**

If you would like further information or would like to discuss any details personally, please get in touch with me, by email: lw22abj@herts.ac.uk

Although we hope it is not the case, if you have any complaints or concerns about any aspect of the way you have been approached or treated during the course of this study, please write to the University's Secretary and Registrar at the following address:

Secretary and Registrar

University of Hertfordshire

College Lane

Hatfield

Herts

AL10 9AB

Thank you very much for reading this information and giving consideration to taking part in this study.

Appendix F- Scenario-Based Questionnaire for Pre- and Post-Assessment

What Would You Do?

Your name: _____ **Your class:** _____

☑ Tick in the box to show what you would do.

1. If someone did or said something to make you feel worried and uncomfortable, what would you do?

- ☐ I wouldn't do anything
- ☐ I would say stop **OR** tell an adult
- ☐ I would say stop **and** tell an adult
- ☐ I don't know

2. If someone wanted you to send them a picture of yourself but you didn't want to, what would you do?

- ☐ I wouldn't do anything
- ☐ I would say stop **OR** tell an adult
- ☐ I would say stop **and** tell an adult
- ☐ I don't know

3. If someone touched your body and it made you feel uncomfortable, what would you do?

- ☐ I wouldn't do anything
- ☐ I would say stop **OR** tell an adult
- ☐ I would say stop **and** tell an adult
- ☐ I don't know

4. What do you do if someone sent you a mean message online?

- ☐ I wouldn't do anything
- ☐ I would say stop **OR** tell an adult
- ☐ I would say stop **and** tell an adult
- ☐ I don't know

5. Student Usage

Which of the following platforms do you use? – please tick all that apply.

TikTok	Instagram	Snapchat	Facebook	Discord	WhatsApp	YouTube	Reddit

6. Have you ever seen anything online that worried or upset or confused you online?

For adult only	
Student age:	Student's gender: F / M
Total:	

(Adapted from Thomas 2022)

Appendix G- Observation Form of Student Participants

Facilitator observation template

This form may be completed on paper, scanned/photographed and sent to the evaluator. Alternatively, it can be submitted through an online Google Form.

1. Class information

a) Name of school: _____ b) Name of class: _____

c) Age range of children observed (youngest – oldest age):	d) Gender of children observed	
	Number of male students	Number of female students

2. Which themes were delivered in the session you observed?

	Teacher delivered lesson.	The children played the game.
Theme 1: Trusted Adult	☐	☐
Theme 2: Staying Stop	☐	☐
Theme 3: Keeping Secrets	☐	☐
Theme 4: Private Body Parts	☐	☐
Theme 5: Pictures and Videos	☐	☐
Theme 6: Online Bullying	☐	☐
Theme 7: Imposters Online	☐	☐

3. When the children played the games, did the children play individually, in pairs or in groups of 3+?

	Some children	Most children	All children
Individually (1 child to a computer)			
In pairs (2 children to a computer)			
In groups of 3 or more			

4. On average, how engaged would you say the children were?

1	2	3	4	5	6	7	8	9	10
Extremely unengaged									Extremely engaged

5. Approximately how long did the children play the games for during this lesson (if known)?

_____ Minutes ☐ I am not sure / did not observe the whole lesson

6. What questions did the children ask the teacher/when they were playing the game?

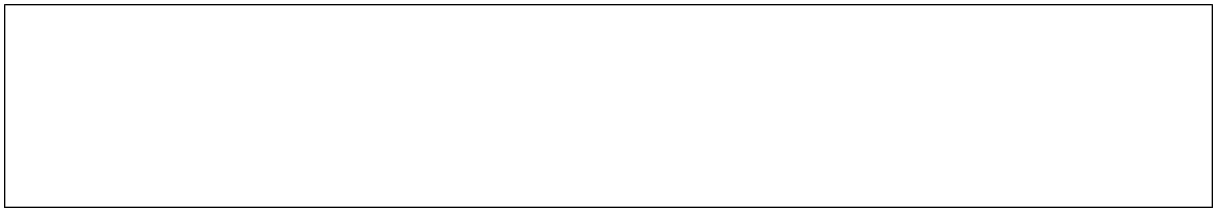
7. Overall, how accessible was the DKD program- did the students understand the

8. Please share any observations you have on when and why children were more and less engaged in the lesson or the games. *This may because of understanding, fun, the style of teaching or other classroom factors. It may be certain groups of children who seem differently engaged e.g. children of different genders or ages, children who played alone or in a group.*

9. Did the teacher have any noticeable difficulties in delivering the lesson, including the games? *These may include challenges relating to the environment, technical issues, behaviour management, their understanding of the materials.*

10. Were there any interactions between the students – if yes what was said?

11. Were the games and content age-appropriate?



(Adapted from Thomas., 2022)

TEACHERS GUIDE

SESSION 02

a. Set-up and re-cap

Remind the pupils of the 'group rules' established in Session 1. Recap key learning from Session 1. Can they remember what they should do if they feel uncomfortable or unsafe? Remind the class that they should **Say Stop** and tell a **Trusted Adult**. Make sure each pupil has access to a computer. The pupil can go to the website and enter the name and Class ID as before to continue from where they left off. ***NB: Holding Shift while pressing P will skip to the end of the animations or games.***

b. Key Vocabulary

Consent	Setting boundaries	Good Secrets /Bad Secrets	Comfortable	Uncomfortable	Hurt	Scared
Embarrassed	Trusted Adult	Safe/unsafe	Public/Private	Private Body Parts	Personal Information	

c. Learning Intention & Success Criteria

Theme 04

Pupils learn that their body belongs to them and that no one should touch their body without consent.

Theme 05

Pupils learn that taking and showing sexual images is sexual abuse.

d. Success Criteria

Pupil should be able to:

- Identify and name the biological terms for male and female sex parts.
- Understand that any part of their body under their swimsuit is private and belongs to them.
- Understand that no one has the right to touch them without consent.
- Know that they should **Say Stop** if their consent is not given.

Pupils should be able to:

- Explain that nobody should be taking pictures *(or videos)* of their **Private Body Parts**.
- Know that nobody should be ask them to take pictures *(or videos)* of their **Private Body Parts**.
- Know that nobody should be showing them pictures of videos of other people's private parts.
- Know if they feel uncomfortable or unsure, tell a **Trusted Adult**.

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TEACHERS GUIDE

SESSION 02

e. Overview of the Game

Theme 04

The pupils will watch an animation which introduces the concept of **Private Body Parts**.

The objective of the game is to solve the puzzles to ensure the heroes have protected their **Private Body Parts** as part of their hero outfit.

The puzzle is solved by using the arrow keys to select which puzzle piece to rotate and by tapping space bar to rotate the piece clockwise by 90 degrees.

Theme 05

The pupils will watch an animation which introduces the concept of **Pictures and Videos**. They will then choose three **Trusted Adult Heroes** who will help them throughout the game.

The objective of the game is to stop the bad pictures and videos from going up by moving their hero to select the bad images by tapping the spacebar, so they are selected and go down. Good images should be left to go up. At key stages the player must summon the **Trusted Adult Hero** to help them deal with all the bad pictures and videos.

Then they will play an Interactive Scene 'Help a child Part 2' covering these themes.

Class Follow up Activity (workshop)

After the pupils have finished playing the games from session 2, use the following questions and activities to facilitate further discussion.
(For more questions and answers turn to page 27)

Continued on next page

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Activity 2a- Good Touch Vs Bad Touch

Show the pupils the body outline with arrows to different body parts *(See Appendix 3)*. The teacher should point to the body parts one at a time and check that the pupils know the names / sign for each part of the body.

Body parts: Neck, ear, hand, feet, lips, tongue, penis, nipples, back, vulva, bottom, toes, tummy, arms, mouth, neck, thigh, hair

Ask the pupils to work in pairs, using three different colouring pencils they should colour code each body part with either ***bad touch, good touch,*** or ***depends on feelings.*** If colouring pencils aren't readily available, they could use code instead (B=bad touch, G=good touch, D=depends on feelings).

Explain to the class that body parts labelled **as 'bad touch',** belong to the child and should not be touched unless there is a medical reason to do so *(see exceptions below).*

For body parts labelled **'depends on feelings'**, pupils should be encouraged to think of body parts that might be ok, but could also be not ok, depending on how the touch made the child feel (i.e. touching the neck could be done to cause arousal).

Body parts placed labelled as **'good touch,'** are OK to be touched if the child consents (hands, hair, back for example).

Remind the class that all touches *(good, bad and necessary require consent)* and should never be a secret.

Q Are there exceptions? Can you think of an occasion when someone might need to touch a child's private parts? Children brainstorm examples:

- A doctor or nurse might need to touch your **Private Body Parts**. This should only happen when a **Trusted Adult** is present and when there is a medical reason to do so. **It should never be a secret**.
- A parent or carer might need to look or touch if there is a medical reason to do so. **It should never be a secret**.
- Young children or a child with disability might need help washing and with toileting. **It should never be a secret**.
- If a child has an injury which means they are temporarily unable to wash or toilet independently. **It should never be a secret**.

TEACHERS GUIDE
SESSION 02

Differentiation
Suggested adaptations to support pupils who are struggling to grasp the concepts or need further support and scaffolding.

Activity 2a – Bad Touch
The teacher could colour code the **'depends on feelings'** body parts and ask the pupil/s to focus on colour coding **'good touch'** and **'bad touch'** body parts.

Success Criteria

By the end of the session pupils should be able to:

- Know that their body belongs to them and that no one should touch their body without consent.
- Know that taking and showing sexual images is sexual abuse.
- Know to **Say Stop** if someone is doing something that makes them feel unsafe and to tell a **Trusted Adult**.

End of session 02

Appendix I- Welcome Email

Dear Colleague,

Please could you spare a few minutes to complete this short survey about internet safety with D/deaf learners?

I am a Teacher of the Deaf undertaking a Masters qualification with Mary Hare, through the University of Hertfordshire. I am researching the topic of internet safety with D/deaf learners. As someone working with D/deaf learners, your feedback from this survey will provide valuable insight on the topic of Internet Safety with D/deaf learners in the UK.

The survey will take approximately 5-10 minutes to complete.

The link to the survey is as follows:

http://forms.office.com/e/YfLcwXE2Lh?origin=lprLink

The University of Hertfordshire Ethics Approval Number for this study is: SLE/PGT/CP/06202.

If you have any questions, please don't hesitate to get in touch with me by email at lw22abj@herts.ac.uk or my supervisor Dr Imran Mulla at: i.mulla@herts.ac.uk

We really appreciate your input.

Kindest wishes,

Laura Woods

Appendix J- Survey Questions for Professionals

Teacher of the Deaf – Deaf Learners and Internet Safety Questionnaire

- You are being invited to complete an online survey as part of a Masters in Deaf Education being undertaken by Laura Woods, with Mary Hare and the University of Hertfordshire, UK. Please read the following information carefully before deciding whether or not to take part. Please ask if there is anything that is not clear or if you would like more information.
- You are eligible to take part in this study if you are 18 or over and a Teacher of the Deaf or Educational Audiologist.
- The Study The purpose of the study is to investigate the views and experiences of Teachers of the Deaf and Educational Audiologist in regard to internet safety and D/deaf learners.
- What does taking part involve? If you agree to take part in this study, you will be asked to complete an online questionnaire. This questionnaire will ask about your job role, experience and views on the subject of Deaf learners and internet safety and it will take you approximately 5-10 minutes to complete.
- Do I have to take part? No. It is up to you to decide whether or not to take part. You are free to withdraw from the study at any time and without giving a reason. If you choose not to take part, you do not need to do anything further.
- Are there any benefits or risks for me if I take part? You may not directly benefit from this research; however, we hope that your participation in the study may help to form wider understanding of D/deaf learners and internet safety and whether there is adequate support and training for this issue. There are no expected risks for participants. Any data that you provide will be treated as confidential and the questionnaire is anonymous. All data from the study will be stored securely on my One Drive cloud storage system and will be deleted when the Masters is finished.
- What will happen to the findings of this study? The findings will be used to produce data to answer my research questions.
- Has this study received ethical approval? This study has been approved by: The University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority. The UH protocol number for this study is SLE/PGT/CP/06202
- If you would like to receive more information and for any other queries about this project you can contact me by email Laura Woods lw22abj@herts.ac.uk or my Supervisor, Dr Imran Mulla i.mulla@herts.ac.uk. Although we hope it is not the case, if you have any complaints or concerns about any aspect of the way you have been approached or treated during the course of this study, please write to the University's Secretary and Registrar at the following address: Secretary and Registrar University of Hertfordshire College Lane Hatfield, Hertfordshire AL10 9AB United Kingdom
- If you do not wish to participate in this survey, just close your browser. If you are interested in taking part, please

1.

- I confirm that I have read the study information. I have had the opportunity to consider the information and ask questions. Any questions have been answered satisfactorily.
- I understand that my participation is voluntary, and I am free to withdraw from the study at any time without giving a reason
- I am 18 or over

*

◯ Yes

◯ No

2. Which best describes your job role? *Please select one.* *

- ◯ ToD in a specialist Deaf School (Primary)
- ◯ ToD in a specialist Deaf School (Secondary)
- ◯ ToD in a resource base/provision (Primary)
- ◯ ToD in a resource base/provision (Secondary)
- ◯ ToD in a peripatetic role
- ◯ ToD in a college/further education role
- ◯ ToD in a SEND school (not exclusively Deaf) (Primary)
- ◯ ToD in a SEND school (not exclusively Deaf) (Secondary)
- ◯ ToD in a hospital or implant centre
- ◯ ToD retired, on maternity or not currently working
- ◯ Educational audiologist
- ◯ Educational audiologist retired, on maternity or not currently working
- ◯ Mix of two or more of the above
- ◯ Other

3. How long have you been a ToD or Ed Aud? *

- ◯ Currently training/trainee ToD/Ed Aud
- ◯ Qualified for 1-3 years
- ◯ Qualified for 4-6 years
- ◯ Qualified for 7-10 years
- ◯ Qualified for 10 years +
- ◯ Other

4. Does your school/provision/team use a specific program or series of work on keeping D/deaf learners safe online? *

- ◯ Yes
- ◯ No

5. Please state which program your team/provision/school use *

6. Have you received safeguarding training in the last 12 months? *

- ◯ Yes
- ◯ No

7. Did this safeguarding training include advice specifically for working with D/deaf learners? *

- ◯ Yes
- ◯ No

8. Did this safeguarding training include internet safety advice? *

- ◯ Yes
- ◯ No

9. Do you feel confident in answering and dealing with questions or discussions around keeping safe online with your D/deaf learners? *

10. Do you know where you could go for further information and/or advice regarding keeping D/deaf learners safe online? *

11. Deaf Kidz Defenders, created by Deaf Kidz International (https://deafkidzinternational.org/dkdefenders/) is a scheme of work and accompanying games aimed at helping D/deaf learners develop the skills to be safe online.
It covers the following seven topics. Which of these topics would be relevant for the students you support? *

- [ ] Trusted adults
- [ ] Staying stop
- [ ] Keeping secrets
- [ ] Private body parts
- [ ] Sending pictures and videos
- [ ] Online bullying
- [ ] Imposters online

12. Are there any other topics not covered by the Deaf Kidz Defenders program which you think would be useful for your D/deaf learners? *

13. On a scale of 1 – 10 (with one being not at all and 10 being very vulnerable) how vulnerable do you think the D/deaf learners you work with are in regard to keeping themselves safe online? *

1	2	3	4	5	6	7	8	9	10

14. Please provide any other thoughts and/ or comments you have on online safety and Deaf learners.