Using Assistive Technology (AT) with children aged 7-11 who have specific learning differences (SpLDs) in an independent prep school: a qualitative case study of pupil and teacher perceptions

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“Using Assistive Technology (AT) with children aged 7-11 who have specific learning differences (SpLDs) in an independent prep school: a qualitative case study of pupil and teacher perceptions”

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Katharine Williams

Tutor: Dr Katie Rix
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Abstract
The voices of children with specific learning differences (SPLD) are rarely listened to. This qualitative case study, focused on five children between 7 - 11 years old, their teachers and their use of Assistive Technology (AT). Thematic analysis found themes relating to: learning and school experiences, barriers to using AT, impact on teaching and learning and wellbeing. The study revealed that the children wanted to be active rather than passive when making decisions about their use of AT whilst teachers, needed to reflect on current pedagogical practices to accommodate the needs of the children.

Keywords: children’s voice, specific learning differences, assistive technology
Chapter 1 Introduction

The Department for Education (DfE), Educational Technology (Edtech) Strategy in 2019 described 10 Edtech challenges (DfE, 2019). One challenge focused on the need to identify the best technology for learners with Special Educational Needs (SEND). The DfE’s, Assistive Technology Stakeholder Report: Education (2020), identified some barriers to learning for children with SEND and identified that children were not always able to access appropriate Assistive Technology (AT) to support their independence and engagement in learning. Whilst the COVID19 pandemic has, overnight, changed professional practice in education with the use of Edtech for hybrid and online learning (Trust and Whalen, 2021).

Much of the literature, particularly that related to Edtech and AT, focuses on the implementation of Edtech from the perspective of professionals, rather than focusing on the experiences and needs of children using this technology (Carroll and Twomey, 2021). The DfE Edtech Strategy (DfE, 2019) does not offer children using AT the opportunity to participate in decision making or value their agency and voice on this issue. However, children should be able to make their voice heard in matters that affect them (UNCRC, 1989) and understand their needs (DfE, 2014). Educational practitioners should facilitate a child’s right to be consulted (I’Anson and Weston, 2018) and these views should inform professional practice (Eriksson and Pringle, 2019). The purpose of this study is to enable children with Specific Learning Differences (SpLD) to voice their opinions regarding the current use of AT and help to inform and change professional practice in the future.

The research has been undertaken in a small independent prep school, which is part of a global educational group, and is in the process of becoming a Microsoft Showcase School. All children, from Year 3 to Year 6, have a 1-2-1 device. The children in Years 4-6 have had their devices for 18 months whilst those in Year 3 have only been using 1-2-1 devices for about 6 months. The school is developing a hybrid approach to learning whereby the 1-2-1 devices are used in a variety of ways e.g., to complete learning tasks, as AT, as a research resource, for assessment, and home learning. As a class teacher, in Year 3, the researcher is responsible for teaching, learning and assessing their class as well as introducing the use of 1-2-1 devices to all children in their class.
The use of Edtech in the classroom as AT has been of great interest to the researcher for many years. In 1993, as part of their PGCE teacher training, the researcher looked at the emerging use of computers in primary classrooms and how they could potentially assist children with SpLDs. Whilst studying E809, the researcher developed an interest in how professional practice is developed and changed. The teaching practice of the researcher was completely changed during the pandemic when Edtech had to be used to teach online and their classroom became a centre for hybrid learning. The EMA completed for E809 focused on teaching through the pandemic focusing on the change from classroom-based learning to the wild frontier (Scanlan, 2020) of online teaching. Changes in teaching practice, the use of 1-2-1 devices and the observation made by Kucrikova (2018) in reading for E808, discussing how children show agency in their use of digital technology and sometimes opposes how adults think they should use it, made the researcher reflect on how Edtech was being used for and by children who had SpLDs.

The use of a case study approach utilising qualitative research methods in the form of interviews and open-ended questionnaires enabled the research to be focused on the educational setting in which the researcher worked. This research approach, suggests Dexter and Seden (2012), enabled the researcher, as an insider, to focus only on the interests and priorities of the children and teachers within the setting regarding their perceptions of AT and its impact on their learning and school experience. Furthermore, this approach has been able to identify and address barriers to best practice and learning within the setting and make recommendations for manageable change.
Chapter 2 Literature Review

The literature review was undertaken to both gain a better understanding and to broaden background knowledge of the use of Assistive Technology (AT) by children with specific learning differences (SpLDs). The literature review also led to an improved understanding of teacher perceptions of AT.

Databases used to locate peer reviewed journal articles and books were: Google Scholar, The Open University library and Academia.edu. The initial search parameters were: assistive technology and learning disabilities, developed from the use of current 1-2-1 devices in the setting and researcher’s pedagogical practice. Learning disabilities was too broad a term and did not relate the setting. Further reading led to the more explicit terms: specific learning disabilities/differences. The terms: children’s perceptions and teacher perceptions of AT were used to explore children’s voice and pedagogy. The literature reviewed was of research and literature reviews conducted globally.

The literature review identified themes which aided the formulation of the research questions and design. The literature review will initially define AT and SpLD. Then the literature review will examine the main themes identified: children’s voice, the specific barriers and benefits to using AT for both teachers and children, wellbeing and AT and the conceptual frameworks. The review will conclude by looking briefly at methodology and at the development of the research questions.

2.1 Defining Assistive Technology (AT)

The review of literature indicated that there was no standard agreed definition of AT (Chambers, 2020) and that the Individuals with Disabilities in Education Act (IDEA, 2004) definition is the one most often used in research (Schock and Lee, 2016).

“…any item, piece of equipment or product system whether acquired off the shelf, modified or customised that is used to increase, maintain or improve the functional capabilities of children with disabilities.” (Section 3, IDEA, 2004)

The UNESCO Institute for Statistics (2019) uses a definition relating to the Sustainable Development Goal linked to education and literacy. The definition is broad to encompass a wide variety of devices from Low to High-tech. Assistive technology
falling into the high-tech bracket includes computers, iPads and Smart phones. Although, computers are often not perceived as AT and are often viewed as instructional or educational devices (Bouck and Long, 2021). AT used in education should enhance the daily functioning of children within an educational setting and promote well-being according to the World Health Organization (2018). Chambers (2020) provides an AT continuum giving examples of Low, Mid and High-Tech AT.

![AT Continuum](Fig.1 Adapted version of Continuum of Assistive Technology (Chambers, 2020) including educational devices (in bold) (Bouck and Long, 2021)

2.2 Defining Specific Learning Differences (SpLDs)

Perlmutter, McGregor and Gordon (2018) in their systematic review of AT interventions suggested that the definition of learning disabilities varies from publication to publication. This is also the conclusion of this literature review. Similarly, Perlmutter, McGregor and Gordon (2018) chose not to favour a specific definition and included the search terms “learning disabilities” and “learning difficulties” alongside terms relating to specific learning disabilities such as dyslexia. Initially, this study was to use the term “Specific Learning Disability” which encompasses several disorders which affect acquisition, organisation, retention, understanding or use of verbal/nonverbal information (Atanga et al., 2020; Schock and Lee, 2016). According to Edyburn (DfE, 2020), specific learning disabilities include dyslexia, dyspraxia and dyscalculia. For the purposes of this study, following discussion with a parent, the term
“Specific Learning Differences” will be used which refers to differences and/or difficulties individuals have with aspects of learning. The most common SpLDs are: dyslexia, dyspraxia, attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), dyscalculia and dysgraphia. This definition covered the SpLDs of the participants in this study.

2.3 Children’s Voice

Article 12 of the United Nations Convention on the Rights of the Child (UNCRC, 1989) says that children should be able to express their views on matters that affect them. The SEND Code of Practice (2014), states that children with SEND (Special Educational Needs and Disabilities) understand their own needs and should have the right to express their views to help make the most of their education. Wright et al. (2011) stated that the voice of children with SEND is woefully underrepresented in research about AT. The literature review undertaken for the current research, found that there had been little research undertaken with child participants under the age of 13 (Carroll and Twomey, 2021). Carroll and Twomey (2021), suggested that research about AT often focused on undertaking research “on” children, using quantitative methods measuring progress and achievement (Edyburn, 2006), rather than “with” children as in the research of Young (2012) and Schock and Lee (2016) who explored children’s perceptions of themselves as learners in relation to AT. As Eriksson and Pringle (2019) argue, children’s perspectives should inform professional practice and I’Anson and Weston (2018) believe that practitioners should be aware of the need to facilitate a child’s right to be consulted. Therefore, this research study aims to address this gap in research by enabling children between 7 and 11 years old with SpLD, to voice their opinions about how AT has impacted on their school and learning experiences.

2.4 Barriers and Benefits of AT

One of the key themes revealed by the literature review was that there were both barriers and benefits to the use of AT within education. The benefits of using AT were
related to the experiences of learners whilst the barriers to the use of AT were encountered by both teachers and pupils.

For children using AT, Kohlmeyer and Edyburn (2022) and Maor et al. (2011) suggest that the benefits include increased literacy skills. Schock and Lee (2016) and Edyburn (2006) found that AT enabled children to successfully complete tasks independently, leading to improved quality of: work and academic achievement (Kohlmeyer and Edyburn, 2022), performance and successful learning opportunities (Ahmed, 2018). Equal participation in activities when using AT helped to promote a positive idea of self as a learner (Schock and Lee, 2016), feelings of inclusion (Ahmed, 2018) and sense of ‘belonging’ which is discussed in Section 2.5 (Chambers, 2020). Collaborative skills are improved (Chambers, 2020; Ahmed, 2018) and children can express themselves in a variety of ways (Cumming and Strnadová, 2020). Barriers to learning for children using AT may include: lack of time to develop skills (Chambers et al., 2020), reduced independence (Kohlmeyer and Edyburn, 2022), negative self-image (Kohlmeyer and Edyburn, 2022) and stigmatisation (Edyburn, 2010).

For teachers, the use of AT is beneficial because it enables them to optimise the strengths of their pupils (Cumming and Strnadová, 2020), allows difference within the classroom to be valued (Chambers, 2020) and teachers can create learning experiences which promote engagement (Chambers, 2020; Ahmed, 2018). However, the barriers to the use of AT seem to outweigh the benefits. Kohlmeyer and Edyburn (2022) identified that pedagogical beliefs about what “good” education looks like, whilst Ahmed (2018) cites teachers’ lack of belief that AT actually works and negative attitudes towards AT, as a barrier to AT being integrated into the classroom. Cumming and Strnadová (2020), Chambers et al. (2021), and, Kohlmeyer and Edyburn (2022) suggest that the inability of teachers to differentiate lessons for learners, to integrate the use of AT, is a barrier to its use. The lack of training about AT as part of career professional development is also identified as a barrier to the use of AT (Kohlmeyer and Edyburn, 2022; Chambers et al. 2021; Chambers, 2020; Schock and Lee, 2016).

Other barriers related to the wider organisations within education including the provision of IT specialists who can sort out problems relating to hardware and software which are a constant source of frustration for both teachers and children (Kohlmeyer and Edyburn, 2022; Chambers et al, 2021). Swift advances in EdTech (Chambers, et
al, 2021) and policies which hinder accessibility whether governmental or organisational e.g., Data Privacy Impact Assessment (DPIA) of software applications (Kohlmeyer and Edyburn, 2022) are also barriers.

2.5 Wellbeing and AT

An important theme identified, is the link between AT and Wellbeing. According to the World Health Organisation (2020), AT used in education should enhance the daily functioning of children within an educational setting and promote well-being. For Borg et al. (2021), AT is important and necessary for improving wellbeing. Whilst Kohlmeyer and Edyburn (2022), suggest that AT has a positive impact on the quality of life of, and can empower, children. Kohlmeyer and Edyburn (2022), explain that a positive perception as a learner will increase self-confidence which could lead to: greater independence; feelings of inclusion; greater inclusion and improved academic achievement (Schock and Lee, 2016; Young, 2012).

Chambers (2020), looked at inclusive education and AT and suggested that inclusive education, within the mainstream classroom, needed to create a sense of ‘belonging’ and enable children with disabilities (including those with SpLDs) to access the curriculum and social aspects of the classroom.

The notion of ‘belonging’ according to Maslow (1943), is seen as a basic human need and students with SpLDs need to feel the same. According to Chambers (2020), ‘belonging’ within education is developed through a positive school climate, teachers who value differences, good social relationships with both teachers and peers, the ability to contribute to classroom life and active participation in learning activities. All these elements could lead to the pinnacle of Maslow’s Hierarchy of Needs (1943), the concept of ‘self-actualisation’ which occurs when an individual is challenged, has opportunity to be innovative or creative and is enabled, in this instance via AT, to learn at a higher level (The Open University, 2018; Milheim, 2012).

Chambers (2020), suggests that a positive school climate can be developed if the use of AT is boosted in a school setting. This could be enabled by addressing the barriers to AT use already discussed in Section 2.4, whereby problems with professional development and training are addressed so that both teachers and support staff are able to successfully support children with SpLDs (Chambers and Berlach, 2015).
Edyburn (2010), was concerned that the use of AT could cause stigma or become exclusionary for children with SpLDs because they were using AT technology when others were not. Chambers (2020) suggested that if all students use devices in the classroom, then the use of Edtech would become normalised for all learners thus creating a sense of belonging. If teachers celebrate and value differences, amongst all children in the classroom, then teachers can cater for all needs (Chambers, 2020).

AT also enables children with SpLDs to express their understanding of the things they are learning about in school and the teaching they are being given. For example, Schock and Lee (2016), found that children with SpLDs were much more positive about themselves as learners because they were able to use a variety of applications to show their learning. According to CAST (2020), AT is important because it supports and maintains children’s engagement with the curriculum and enables children with SpLDs to make valuable and effective contributions to classroom life and activities which would not have been previously available to them. This could be the provision of alternative ways to present knowledge or complete activities e.g., the use of Microsoft Flip or PowerPoints. AT, Chambers (2022) suggests, is a way in which alternative options to participate in the curriculum can be made available to children, enabling children with SpLDs to make their own choices about how to complete tasks within the classroom. There is, therefore, a gap in research examining whether alternative ways to present knowledge are provided and whether children are given a choice in ways to participate in the curriculum.

2.6 Conceptual Frameworks

The conceptual frameworks encountered within the literature were: Connectivism, Constructivism, Ecological Model, Cultural Historical Activity Theory and Interpretivism. Connectivism is a network learning theory which was developed specifically for learning environments using EdTech as a platform and was developed by Siemens (2005). Connectivism, according to Goldie (2016), offers the opportunity to scrutinise how teaching and learning using Edtech can be better understood and managed. Connectivism acknowledges learning can reside in technology and that nurturing and maintaining connections aids and enables learning.
Constructivism according to Al-Shamari, Faulkner and Forlin (2019), involves acknowledging the social dimension of the learning process. Vygotsky cited in Al-Shamari, Faulkner and Forlin (2019), emphasized the importance of the social role of learning through interaction between children, their peers, parents and teachers. Within the educational setting, inclusive educational practices would involve the use of innovative practices i.e., the use of AT, to support the learning of children with SpLDs.

This fluid, reciprocal social nature of the child-environment interaction, suggests that Bronfenbrenner’s ecological model of child development (Bronfenbrenner, 1986) could also be considered when researching children’s use of AT. According to Bronfenbrenner (1986), children should not be regarded as passive recipients of their environmental experiences, as has been suggested by previous research about AT, but active contributors. Thus, their perceptions of AT are influenced by the nature of the setting. The Meso-system, the educational function and social climate of the school will have a positive or negative effect on the children’s attitudes towards their device and its use.

Rowlands (2015) and Edwards (2011) suggest that the Cultural Historical Activity Theory (CHAT) based on Vygotsky in the 1920s and 1930s could address the notion that the learner experiencing a barrier to learning can be, in school, placed in a position and given the correct tools (AT) to facilitate their interaction with resources (AT) and build their learning experience and knowledge. So, using CHAT, the children should be able to in the classroom choose the way they engage or participate in an activity moving away from traditional views of interactivity in the classroom.

CHAT and Bronfenbrenner’s Ecological model link to interpretivism. Schock and Lee (2016) suggested that Interpretivist Theory was ideal for exploring, uncovering and making sense of subjective experiences. While Perlmutter, McGregor and Gordon (2018), suggest that finding out about the lived experiences is an important consideration for examining inclusive education. All the above theories could be linked to the sense of ‘belonging’ (Chambers, 2020; Maslow, 1943) discussed further in Section 2.5.

Although all these frameworks have merit, Goldie (2016) and Al-Shamamari, Faulkner and Forlin (2019) suggest that when looking at inclusive education and therefore AT,
it is best done by adopting a more wide-ranging approach than one single theoretical model.

2.7 Formulating research questions

The literature review identified that previous research has used standardised quantitative and measured approaches which whilst not explicitly stated, seems to be akin to positivism. Perlmutter, McGregor and Gordon (2018) suggest that quantitative research can explain much about the effectiveness of AT in relation to academic improvement using standardised assessment tools (Edyburn, 2010). However, this methodology and position has offered little opportunity to acknowledge children’s voice, particularly of young children, regarding their use of AT (Wright et al., 2011). Children have not been talked to, to understand their experiences. This necessitated a change from an initial positivist to interpretivist approach. Qualitative methods have a place in AT research as they enable researchers to find out more about the lived experiences and perceptions of children who use AT within the inclusive classroom. The choice of methodology discussed in Chapter 3 also influenced the development of the research questions.

Two research questions were developed by identifying gaps in current research. Key gaps included: the lack understanding of children’s experiences of AT i.e., children’s voice; the notion that school experience affects learning experience linked to AT; the need to examine the provision of alternative ways to present knowledge; whether children are given a choice of ways to participate in the curriculum and to better understand the link between wellbeing and AT. The questions were formulated to enable a better understanding of children’s perceptions of AT and understand current teaching practices within the setting.

_How do pupils with specific learning differences think assistive technology (AT) has impacted their school and learning experiences?_

_What are teacher perceptions of the use of assistive technology (AT), how has it impacted on their teaching practice and the learning experience of children with specific learning differences (SpLD)?_
Chapter 3 Research Design

This chapter will describe how design decisions were made. This includes looking at the theoretical and conceptual frameworks that led to the selection of research approach and methodology. The chapter will discuss the ethical decisions taken and how the action of thematic analysis was undertaken.

3.1 Theoretical Framework

The initial ontological position of the researcher was positivist which aligned with much of the literature reviewed. However, the reliance upon methodologies which were quantitative and depended on measured and standardised data collection, critically, did not acknowledge the importance of children’s voice regarding their use of AT (Wright et al., 2011). Therefore, a change in ontological positioning, epistemology and approach was required to enable the research to work “with” rather than “on” child participants (Carroll and Twomey, 2021).

In Section 2.6, it was noted that the conceptual frameworks of Constructivism, Ecological Theory (Bronfenbrenner, 1986) and Cultural Historical Activity Theory, all highlighted that children were not passive participants when interacting with AT but actively involved. Since the current research seeks to understand both pupil and teacher perceptions of AT, to consider the way children and teachers engage and interact with AT, the researcher therefore looked towards interpretivism. Schock and Lee (2016) and Rowlands (2015) suggested that interpretivism was ideal for uncovering and making sense of subjective experiences. Therefore, interpretivism epistemologically, was the ideal position to answer the questions:

- How do pupils with specific learning disabilities think assistive technology (AT) has impacted their school and learning experience?
- What are teacher perceptions of the use of assistive technology (AT), how has it impacted on their teaching practice and the learning experience of children with specific learning differences (SpLD)?
3.2 Research Approach

Initially, the research approach favoured was the narrative approach (NA) which makes meaning out of experience (Reeves, 2007) and encourages participants to tell their story in their own words (Braun and Clark, 2019). Unit 6.3.7 (The Open University, 2021a) suggested that NA would enable both the experiences of the children and teachers, to be articulated. NA would provide rich evidence (The Open University, 2021b) that could contribute to the development of better policies and practices (The Open University, 2021a) for the use of AT for children with SpLD. The NA approach also fitted within the interpretivist paradigm.

As the research title and questions developed, NA on its own became less favourable. Much of the literature linked to AT focused on the use of case studies (CS) (Dawson et al., 2019; Ok and Rao, 2019). Yin (2003) and Elliott (2007a) suggest that CS is an ideal way to answer questions related to practice and inform decision making. Whilst Creswell (1994) cited in Cohen, Manion and Morrison (2017), suggest that a CS would justify research within a specific setting. CS would allow the detailed examination of a small sample (Tight, 2010) and justify the use of a small sub group of pupils within the setting (Cohen, Manion and Morrison, 2017). The conceptual frameworks of Constructivism and CHAT, and Bronfenbrenner (1986) discussed in Section 2.6 can also be better understood using a CS. Cohen, Manion and Morrison (2017), state that CS allows for multiple methods of data collection and analysis. CS operates within many other types of research approaches and follows the interpretivist tradition which views situations through the eyes of participants.

The use of CS and NA are not without criticism. Yin (2003), argues that an objection to CS is related to representation i.e., who is included in the research which will be addressed in Section 3.3. Whilst, Smith (1991) cited in Cohen, Manion and Morrison (2017), suggests that CS and NA linked to the interpretivist paradigm are weak as research approaches as reliability and validity are difficult to demonstrate. As the proposed CS would be situated in a unique environment, the need to generalise findings across wider settings was not required and thus the selection of CS as research approach was justified.
3.3 Participants and Recruitment

As the research approach was a CS, it was important to consider how to ethically justify the selection of a sub group of the Key Stage 2 (KS2) cohort. Both Sharma (2017) and Schock and Lee (2016) suggested the process of purposeful selection. Although all children within the setting have 1-2-1 devices, it was only children with a SpLD who were of interest for this study.

As an insider, there was an awareness of which children had SpLDs having taught most of them as a class teacher. It was important, to discuss with both the SENDCo and the Headteacher/Gatekeeper, if it was appropriate for invitations to participate in the study should be sent only to those on the SENDCo’s lists. Within the setting, children supported by the SENDCo are divided into four categories: monitored children, those with Registers of Concern (ROC), those with an Individual Education Plan (IEP) and those with an Educational Health Care Plan (EHCP). In Section 2.2, SpLDs were defined, children within the monitored category did not fit the definition because they were not formally diagnosed with an SpLD or in the process of diagnosis and so were therefore omitted from the study. Discussions were held, with the SENDCo and the Headteacher/Gatekeeper, about the efficacy of including children with severe cognitive impairment who had EHCPs and it was agreed that these children would not be invited to participate. Children, therefore, who had a ROC or an IEP were considered for participation in the study.

Prior to inviting the children to participate in the study, a request for assistance for a Master’s degree small scale investigation was sent out to all parents with children who had an ROC or IEP (See Appendix A). There were 18 letters sent out. There were 10 responses from parents indicating that they were interested in receiving more information. A further letter, which was adapted to explain the nature of the research and a child friendly consent form which included emojis (See Appendix B) was sent out. From this, there were 7 completed consent forms returned from parents/children. The 7 child participants were spread over each year band from Year 3 to Year 6 and comprised of 6 boys and 1 girl.

Teachers teaching KS2, either as class teachers or specialists were invited to participate in the study. The researcher did not complete the open-ended questionnaire as Unluer (2012) suggests that there should be distinction between role
of researcher and participant, to make the research credible. The researcher felt that
they would be biased and influenced by their knowledge of the subject area and unable
to respond objectively to questions, so removed themselves from the study. The
教学 staff were informed of the proposed research via a short talk in a staff meeting
explaining the purpose of the research and the proposed opportunity for staff to
voluntarily participate in the study (BERA, 2018). Invitations to complete the
questionnaire were sent via email with an explanatory letter attached again explaining
the purpose of the study (See Appendix C).

3.4 Research Methods

The title of the research, the theoretical, and research positions indicate that the
research methods chosen would be qualitative. Shock and Lee (2016) used focused
groups as a research method. However, this method was discarded despite offering
the opportunity to discuss and reflect on experiences. As an insider with an awareness
of the setting, this research method was discarded for both child and adult participants.
Prior research within the setting indicated that focus groups did not work due to the
adults being put off from voicing and discussing experiences, especially when
anonymity could not be guaranteed. Williams (2022a), the researcher, discussed their
experiences within the E822, Unit 7 SSI Interviews forum (See Appendix D). While
for the child participants, a focus group would have worked but having the insider
knowledge of knowing all the children, having taught them, individual interviews
seemed the better fit, as the children were more likely to talk more freely in a 1-to-1
situation. The use of a questionnaire for the children to be completed online was
discarded for a variety of reasons.

As already discussed in Section 2.2, children with SpLDs are likely to have dyslexia
and as an insider researcher there was an awareness that the majority of SpLDs
encountered within the setting were related to difficulties reading. Williams (2022b)
discussed their concerns about the efficacy of using questionnaires with children with
SpLDs within the E822 Unit 7 SSI Questionnaires forum and their impact on wellbeing
in general (See Appendix D).

Interviews were used for the child participants in the study because it was hoped that
they would elicit qualitative data. The interviews with the child participants, according
to Marvasti and Tanner (2020), should provide detailed responses producing qualitative data. Elliott (2020b), suggested that interviews produce a narrative which allows participants to reflect on their experiences and should enable researchers to understand the meanings from the perspective of their participants. Mishler (1986) cited in Marvasti and Tanner (2020), thought that interviews empowered participants and enabled them to speak in their own ‘voices’ and therefore address the lack of children’s voice in previous research about AT identified by Carroll and Twomey (2021).

There are some difficulties attributed to interviews. Holloway and Jefferson (2012) cited in Marvasti and Tanner (2020) found difficulty getting narrative responses because they were not using everyday language to ask their questions. A pilot study was conducted to ensure that the guide questions (See Appendix F used in the interviews enabled the children to comprehend the questions and vocabulary but not to be led at the same time. The researcher took care to ask if the children understood vocabulary used.

For the adult participants, a questionnaire using open ended questions which Unit 7.2.2 (The Open University, 2021c), suggests can produce qualitative data. Respondents could write a comment, explanation, opinion or reflection. It was also a suitable choice because the intended sample size would be 11 teachers. Sheehy et al. (2017) chose to use this method of data collection because it had the advantage of not collecting unnecessary data and only used justifiable questions relevant to the research. It would be compliant with ethical guidance provided by the British Psychological Society (2014). This ethical consideration would also enable colleagues to complete the questionnaire in their own time using Microsoft forms, a platform they were familiar with, as the proposed timing of the research clashed with the busiest term within the setting (Appendix G, Grid Point 2).

The original children’s questions and those of the adults were based on the work of Shock and Lee (2016). However, through further reading, the questions were developed to consider that the use of AT, was important for wellbeing (Borg et al., 2021; Chambers, 2020; WHO, 2020). The questions devised by Davis (2012), Rowland (2015) and Svensson et.al. (2021) who had also investigated AT were reflected upon and revisions of the original questions developed were made. Although
tentative questions about wellbeing had originally been included for the adults, following further reading, the decision was made to emphasise wellbeing as part of the focus of the questions as wellbeing had been an important issue for the setting both pre and post pandemic.

3.5 Ethical Considerations

Oates (2019) recommends that the researcher when investigating the experiences of individuals must be aware of the ethical implications of their work. The Open University (2021d) suggests that researchers should always be ethically aware and that researchers complete the “Becoming an Ethical Researcher” course (The Open University, 2021e) prior to embarking on any research to ensure ethical compliance. Stutchbury and Fox’s (2009) ethical analysis tool was completed (Appendix G) which enabled the researcher to reflect upon their four dimensions of: codes of practice; consequences of actions; morality and rationale for research. MacFarlane’s (2009), 6 stages of ethical research were also considered, and the study was set up using the BERA (2018) guidelines.

Conducting research as an insider raised ethical implications that needed to be considered (Open University, 2021e). Firstly, the researcher had to be constantly reflexive and analyse their subjectivity and positionality as practitioner/researcher. Secondly, the research would be challenging because of the relationship between the researcher and their colleagues (BERA, 2018). Thirdly, as an insider it was important to make sure that participation was voluntary and informed for both adult and child participants. As Anderson and Morrow (2011), point out, the researcher's familiarity within the setting and their good relationship with both colleagues and children (and their parents) could prompt individuals to want to take part in the research out of loyalty. Similarly, another consideration was a concern that because of the researcher’s position as a teacher within the setting, power could be exerted over the children (Ponizovsky-Bergelson et al., 2019) and lead them to respond in ways to please the researcher (Sheffield University, 2021; Punch, 2002). Finally, there needed to be an awareness that it was not ethical to use day to day conversations as data, that is covert data (Open University, 2021d) which has not been given consent for use.
Within the setting permission for the study to take place was obtained from the Headteacher who also acted as Gatekeeper (BERA, 2018, section 11–12). Participation in the study was purely voluntary, (BERA, 2018, section 8) (Appendix G, Grid Point 7). Wright et al. (2011) and Alderson and Morrow (2011) suggest that consent to take part in research especially for children with SpLDs is an area of considerable discussion as these children are more vulnerable to the researcher/researched power differential. Information and consent forms were provided in a variety of accessible formats and as suggested by Wright et al. (2011) which can be read using AT (BERA, 2018, Appendix B). Documentation and Information for teachers was also adapted (BERA, 2018, point 9-10; Appendix C). For the child participants there was a right to withdraw and the participants were reminded of this at every stage of the interview and volunteering process (BERA, 2018, point 8; Appendix B and C). The questionnaire did not require provision of identifiable data in line with ethical guidance provided by the British Psychological Society (2014) and participants were informed that they would not be able to withdraw responses once submitted. Similarly, participants of interviews would not be named, and their real pronouns replaced by they/them/their (ICO, 2012).

Discussions were held with the Designated Safeguarding Lead (DSL) about the ethics of doing research in a room alone with the children and potential safeguarding issues. The researcher completed a self-report form and attached a copy of the prompt questions to be used (see Appendix I) to be held by the DSL. The researcher followed the setting’s safeguarding and safe use of Edtech guidance in line with BERA (2018, point 11). Other ethical decisions and procedures can be found in Appendix H.

### 3.6 Pilot Studies

A pilot study was used to check the feasibility of: the questions designed for the interviews and open-ended questionnaire; the appropriateness of language; to check understanding of questions asked; to check whether audio collection goes to plan; to check if extra notes were required; to assess if research protocol was realistic and workable; to check if the use of Microsoft Forms worked to collect questionnaire data and to check allocated time was appropriate. Finally, according to Holloway (1997), the use of a pilot study would enable development of research skills, particularly as a
novice interviewer/research. The pilot study was beneficial and enabled the researcher to work on their technique which did need improvement. Carroll and Twomey (2021) suggested rephrasing questions when the children found the questions or vocabulary difficult to comprehend whilst the advice of Gill Adams (Open University, 2021f) to make the interviews more active and interactive conversations further improved technique. Neither the pilot interviews nor questionnaire responses were included in the final data or results of the CS as suggested by Van Teijlingen and Hundley (2001). Other anticipated problems, such as difficulty timetabling interviews and finding a room, had already been addressed by the Contingency Planning (see Appendix I).

3.7 Analysing Qualitative Data using Thematic Analysis

According to Cohen, Manion and Morrison (2017), the analysis of qualitative data is concerned with how the data collected through questionnaires and interviews is understood, justified, and interpreted. It will need to be organised, described, understood, accounted for and made sense of in terms of: how the participants have defined things as well as the researcher, spotting patterns, themes, and categorised. According to Cohen, Manion and Morrison (2017), qualitative data analysis is neither straightforward nor is there a correct way to analyse or present qualitative data. It is a subjective practice, based on the purpose of the research, theoretical framework and the knowledge of the researcher of the setting. However, it can produce high quality data.

O’Sullivan et al. (2021) suggests the use of thematic analysis to analyse the data from both the interviews and questionnaires. It is a reflexive approach suited to “telling stories”, according to Braun and Clark (2019) and they suggest that thematic analysis should be the foundational method of qualitative analysis. Braun and Clarke (2006), advocate that thematic analysis is a flexible approach which is not tied to a theoretical or epistemological position and thus has theoretical freedom. Although, as already stated (Sections 2.3 and 3.1) this research is broadly speaking interpretivist.

Braun and Clarke (2006), outlined a guide to doing/performing thematic analysis. Their guide had six phases. For the purposes of this research study the six phases of thematic analysis were used to perform a thematic analysis of the raw data collected.
Phase 1: familiarising yourself with your data. According to Braun and Clarke (2006) the familiarisation process begins with the transcription of verbal data into a written form which is claims Bird (2005), a key stage and an interpretive act. The researcher used the transcription function in Microsoft Word then edited line by line for errors. This enabled the data to be repeatedly and actively read and meanings and patterns began to emerge. Similarly, written data from responses to the questionnaire on Microsoft Forms was put into a table which enabled this data to be read easily (Appendix J, Fig 2).

Phase 2: generating initial codes. Braun and Clarke (2006) suggest an initial list of ideas and identified key points will be created. The initial set of codes. The current research was coded using “Delve” https://delvetool.com/getstarted (2022). Coding can be done using two approaches either Deductive or Inductive. Deductive coding is a top-down approach using the research questions or an existing framework whilst Inductive coding is a bottom-up approach whereby codes are created when a topic of interest is identified.

As the researcher was a novice, Deductive coding was chosen to code the raw data from the teacher questionnaire. The questions from the questionnaire created initial codes (Appendix J, Fig. 3) then different coding methods were used which included: descriptive codes which summarized descriptions into nouns, in vivo codes which used participants own words and process codes looking for -ing words (Appendix J, Fig. 4) A hybrid approach was used to analyse data from the child interviews. From the research question two initial codes were identified: Learning Experience and School Experience. Progressively more codes were added as more patterns were identified. (Appendix J, Fig. 5)

Phase 3: searching for themes. Once coded the raw data from both children and teachers created many codes (see Appendix J, Fig. 4, 5, 6 and 7). The codes were then sorted and analysed to identify overarching themes. Mind maps helped to visualise this process whilst the use of ‘Delve’ enabled descriptions to be written about each code and potential theme and the software had the ability to move and nest codes under themes (Appendix J, Fig. 8) whilst the “Snippet” tool, enabled coded data to be filtered and easily accessed for review.
Phase 4: reviewing themes and Phase 5: defining and naming themes. Once the candidate themes had been devised, Braun and Clarke (2006) suggest returning to the original codes and reviewing them and continuing to look for patterns. As a lone researcher this process was quite tricky as most researchers use an independent rater (Schock and Lee, 2016). Finally, in Phase 5, the themes are named and defined ready for the data to be presented in Phase 6: writing the report which will be presented in Chapter 4.
Chapter 4 Data Presentation and Analysis

This chapter will present and analyse the data derived from the thematic analysis described in Section 3.5. and a table of themes is presented in Figure 9. Themes extracted from the child and teacher responses will be defined, presented and discussed.

<table>
<thead>
<tr>
<th>Themes: Children</th>
<th>Themes: Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School Experience</strong></td>
<td><strong>AT and wellbeing</strong></td>
</tr>
<tr>
<td>• Support provided for use of AT</td>
<td>• Positive impact</td>
</tr>
<tr>
<td>• Ethos of the school</td>
<td>• Negative impact</td>
</tr>
<tr>
<td><strong>Learning Experience</strong></td>
<td><strong>Teaching and Learning Experience</strong></td>
</tr>
<tr>
<td>• Self-perception as learner</td>
<td>• Positive impacts for T&amp;L for teachers and children</td>
</tr>
<tr>
<td>• Positive Learning experiences</td>
<td>• Negative impacts for T&amp;L teachers and children</td>
</tr>
<tr>
<td>• Negative Learning experiences</td>
<td>• Ideas for change in teaching practice</td>
</tr>
<tr>
<td>• 1-2-1 device use</td>
<td></td>
</tr>
<tr>
<td><strong>Barriers to using AT</strong></td>
<td><strong>AT Meaning</strong></td>
</tr>
<tr>
<td>• Difficulties related to SpLD</td>
<td><strong>AT Currently used</strong></td>
</tr>
<tr>
<td>• General skills using devices and apps</td>
<td></td>
</tr>
<tr>
<td>• Edtech issues</td>
<td></td>
</tr>
<tr>
<td><strong>Improving AT Experience</strong></td>
<td></td>
</tr>
<tr>
<td>• Choice</td>
<td></td>
</tr>
<tr>
<td>• Peer support</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 9 Table showing themes extracted from raw data following thematic analysis.

4.1 Pupil Responses.

- The theme of **School Experience** focused on how the children felt about their school experience when using AT in the classroom. Additional sub-themes looked at how well the children were supported in their use of AT and the ethos of the school.

The children reported that their school experience when using AT was positive because they were not viewed as different by their peers for using their devices.

- It makes me feel special. In a good way... C2

- I think the children are more accepting here than they might be somewhere else. C5

- No, it doesn't matter that I use my device. I don't think I am different. C1

The children were supported to use their devices by their peers, teaching assistants and teachers. Support was often provided at a class level or at an individual level.

- *my teacher showed me how to use dictation and immersive reader*. C5

- *I have like someone that I know that I'm really good working with to help me*. C2
Particularly beneficial to the children has been a dedicated computing teacher who has spent time supporting the children and enabling them to make their devices more accessible.

*My teacher for computing showed us how to change the settings on our computer.* C4

One child did consider the negative impact of being considered different because they used their device to assist them during lessons.

...*I also think it’s a bit bad sometimes because some people might bully me because of what I have.* C3

School ethos and acknowledgement of difference is the likely reason that none of the other children interviewed mentioned the potential for bullying or stigmatisation. The child went on to relate that they might not feel so different if their peers understood the reasons why they used their device.

*My friends in the class need to understand that sometimes I need to use my computer...I need it for my dyslexia.* C3

The evidence shows that the school ethos has played an important part in defining the school experience of the children interviewed. The children have a sense of ‘belonging’ which Chambers (2020) attributed to a positive school climate, teachers who value differences and well-developed social relationships with both teachers and peers. This has been positive for their wellbeing. Furthermore, both teachers and support staff are for the most part able to successfully support children with SpLDs (Chambers and Berlach, 2015), despite problems discussed later, to continue to develop a positive school climate. The Meso-system described by Bronfenbrenner (1986), the educational function and social climate of the school, has had a positive effect on the children’s attitudes towards their school experience using AT.

- The theme of **Learning Experience** focused on the children’s overall learning experience and was linked to the school experience of the children. The sub-themes related to the learning experience included: self-perception; both positive and negative learning experiences and the use of 1-2-1 devices.
The children often used positive words or phrases when describing their learning experience linked to their use of AT. Just like their school experience their learning experiences were positive. The children often felt happy, enjoying the activities they were doing which made them better and easier to do.

*It does make me feel better using the device. Happy. It makes learning easier and better.* C4

*Happy because. I don’t have to like write and spell...Happy, I’m excited. I feel comfortable and bit more confident.* C1

Negative Learning experiences were related to fear of failure, worries and anxieties related to the respondents’ SpLD as well as technology not functioning properly or not being able to use the technology confidently.

*S sometimes it’s a bit glitchy and it’s a bit hard.* C3

See Appendix K, for further thoughts by the children about the different software applications they have used.

As has already been identified the positive ethos of the school has had a huge impact on the learning experiences of the children within the setting (Chambers, 2020; Chambers and Berlach, 2015; Bronfenbrenner, 1986). The positive idea of self as a learner (Schock and Lee, 2016) and the obvious feelings of inclusion (Ahemed, 2018) have also led to a sense of ‘belonging’ (Chambers, 2020). The study found that a positive perception as a learner has increased self-confidence leading to independent learning and feelings of inclusion, which is similar to previous research (Kohlmeyer and Edyburn, 2022). This has led to improved achievement (Schock and Lee, 2016; Young, 2012) although it cannot be confirmed by the current study. However, the evidence does point towards the positive learning experience assisting the children towards self-actualisation (Maslow, 1943) due to their greater sense of belonging.

As with previous studies, there are elements which have led to a negative learning experience and will be further discussed within the next theme.

- The theme of **Barriers to using AT** focused on elements which caused difficulty with the use of AT for the children. The sub-themes related to the main
theme included: difficulties related to SpLDs, general skills including using devices and applications, and issues with Edtech.

The children spoke about a variety of barriers to using AT in the classroom effectively. When using Microsoft Word, the children described how hard it was to select the correct spelling of a word from the selection offered. The children identified that they did not have adequate literacy levels to use the spelling tool.

...if I get something wrong on word then it will immediately come up with the right one...it would have loads of different options...I don’t know how to read it, so I wouldn’t know which one. C5

Similarly, slow typing skills particularly when using word are an issue resulting in the inability of the children to show off their learning.

I’m a very slow typer so I will not get that much done being like normal. C5

Other children reported that they lacked confidence in their computer skills which meant that they feared the possibility of failure when using AT. They used terms like worried, anxious and afraid. Whilst others reported feeling frustrated when their devices did not work correctly e.g., the dictation tool did not work if there was a high level of background noise and that there was no place to work quietly with their devices to use this tool effectively.

Negative learning experiences have been attributed to barriers to using AT related to technical issues with hardware and software, out of the control of the children, which is in line with previous research such as that of Kohlmeyer and Edyburn (2022) and Chambers et al. (2021).

The use of negative language with regard to barriers to learning was of concern especially as this often related to technical issues with hardware and software and as already stated, was out of the control of both children and their teachers as was the issue with the provision of quiet spaces (Schock and Lee, 2016). Currently, stigmatisation, identified by Edyburn (2010) as a barrier to using AT for children, was not identified as a problem within the study, although it was identified as a possibility by one of the children (see School Experience). However, as with other studies this study showed evidence that underdeveloped skills such as typing and literacy skills (Chambers et.al., 2020), in addition to the reduction in confidence and independence
due to lack of skills, leading to a negative self-image (Kohlmeyer and Edyburn, 2022), were a barrier to children's use of AT.

- The theme of **Improving AT Experience** focused on the thoughts of the children in order to find solutions to difficulties that they had encountered using AT. The sub-themes identified were choice and peer to peer support.

The children were asked to think about solutions to problems they had encountered when using AT in the classroom. The children suggested: making reading applications read more precisely; Word could read out letters when typed; making sure teachers consistently used the correct fonts and background colours on their interactive whiteboards. There were, however, two main suggestions which would improve the use of AT for children: choice and peer to peer support.

Firstly, the children wanted autonomy deciding when to use AT in lessons and to be given the choice of which app to use, much improving their experience of using AT. Currently, the children are told when to use AT.

*We can't use them when we want.* C5

*I get told when I can use it.* C1

The children wanted to have the choice to use AT when writing tasks were involved as an alternative to using their pen and paper.

...*the computer is a little bit easier... sometimes writing is a bit hard and I just don't really like writing.* C2

*I would like to choose whether or not I wrote it or typed it.* C3

The children felt, that choosing AT would allow them to present their knowledge in alternative ways e.g., using Microsoft Flip or the Microsoft Dictation tool.

...*it is easier to explain on video because well you are actually saying what you know. Sometimes in writing I think it is harder to explain 'cause ...you know what you are going to say...* C4

*It was good to talk about what I know. And easier than writing it down.* C3
Secondly, the children felt that although they were supported to use their devices and the AT elements such as Immersive Reader, Dictation, etc., they also felt that they would benefit from peer-to-peer support.

…it be helpful if, somebody who is a bit older than me came to help me and show me how to use different things on my computer… C3

One of the children, came up with the idea of starting a club.

I could come down to Year 3 and help them… C1

When asked how they might feel about helping other children who were different they explained that they would feel:

Happy coz it might help other kids with their learning happy because I would have taught someone some stuff coz I don’t talk to the class. C1

However, one child did not feel that younger children would be happy to accept support from their peers.

It would depend on the child actually…if I was a year three, I wouldn’t like a year six to help me…I would prefer teacher. C5

The study substantiated Bronfenbrenner’s (1986) assertion, that children should not be regarded as passive recipients of their environmental experience. This study showed that the children within the setting wanted to and believed that they had the right to be active participants and contributors, to decision making about their use of AT, linking to both the constructivist and CHAT perspectives of learning. Chambers (2020) suggested that children with SpLDs should be given a choice in ways to participate in the curriculum and to be given alternative options to show knowledge. The study showed that the children desired agency of their use of AT (Kucirkova, 2018), were aware of the type of application which suited their learning needs and supported their wellbeing.

Constructivism emphasized the importance of the social role of learning through interaction between children and their peers. The children's suggestion that a peer-to-peer support system should be developed was interesting and would further develop their sense of ‘belonging’ (Chambers, 2020) and wellbeing.
4.2 Teacher Responses

- The theme of **Assistive Technology and Wellbeing** focused on the importance of developing positive school and learning experiences for children. Sub-themes identified were: negative and positive impacts to wellbeing.

The teachers felt that there had been a positive impact on wellbeing with the introduction of the 1-2-1 devices for those with SpLDs and the wider school population. As already noted in the discussion about learning experiences, teachers felt that the wellbeing of the children was improved because they were able to work more independently and were more engaged in their learning.

Wellbeing has been positively impacted according to the teachers, because the use of AT empowered the children thereby enabling them to work at the same levels as their peers. Differences are celebrated and encouraged, and the teachers have been able to use a wide range of platforms to enable greater accessibility and equality.

*I imagine that they feel empowered...they don’t need to worry about spelling in the same way that they would when writing...they don’t need to worry about their handwriting.* T6

*I use Flipgrid regularly for some of my children who struggle with writing. This allow them to show their learning in a way that isn’t writing it down...Recording their response as a video allows the children to feel that they are able to take part in the lesson just as much as everyone else and the teacher can still give feedback to their work and a record of their learning be kept.* T7

However, some respondents believed that the use of AT had a negative effect on wellbeing. Children lacking in IT skills were felt to have their confidence negatively affected.

*They have struggled with using technology in the past and started the year lacking confidence with it.* T7

*The devices, however, can take away from their general confidence ...*T6

Accessibility was also cited as having a negative impact on wellbeing, as well as being linked to inappropriate use of devices.

*Negatively, they can get frustrated when it doesn’t work how they want it to or are being distracted by the device and then asked to stop messing around on it.* T10
Chambers (2020) stated that wellbeing was related to a sense of 'belonging' whereby children using AT in the mainstream classroom including those with SpLDs accessed the curriculum at the same level as their peers. As Chambers (2020) suggests if children are engaged, working independently, empowered and working at the same level as their peers then AT in this setting wellbeing is being positively influenced leading towards self-actualisation (Milheim, 2012). The teachers have tried hard to use a wide variety of inclusive, innovative and educational practices to support the learning of children with SpLDs (Chambers, 2020; Schock and Lee, 2016).

However, both children and teachers have identified that wellbeing can be negatively impacted by a negative self-image created by issues with the use of technology (Kohlmeyer and Edyburn, 2022; Chambers et al., 2021; Chambers, 2020)

- The theme Teaching and Learning Experience focused on the use of 1-2-1 devices within the setting. Sub-themes identified related to: the positive and negative impacts to the teaching and learning experience of teachers and children with SpLD; ideas for future change in teaching practices to improve the use of AT in the classroom.

The teachers reported the introduction of the use of 1-2-1 devices had had a positive impact on the learning experiences of not only children with SpLDs but also the wider pupil population. The children were able to access wider sources of information and the devices allowed them to use Edtech more freely in the classroom.

They can access different sources of information and present their work digitally. T11

The teachers felt the children were more engaged with their learning and developed independent learning skills. Furthermore, the teachers reported that the introduction of the 1-2-1 devices had seen an improvement in IT skills, resulting in not only an improvement in confidence of children with SpLDs but also a desire to show off their knowledge, regardless of ability.

The children have become a lot more independent and confident with using technology... T7

Children are enthused and want to use the devices to show off their knowledge. T10
The most important factor identified by the teachers was their ability to develop differentiated lessons which considered the needs of not only the children with SpLD but also the other children in their classes.

*I encourage all children to use Immersive Reader function on their devices to listen back to their work...* T5

The introduction of the 1-2-1 devices enabled teachers to differentiate learning tasks.

*Using ICT...individualised learning for all. T1*

*Children can have work ready which isn't obviously different for them. T1*

*It allows for independent learning and research at their own pace. T9*

The 1-2-1 devices used in this setting were introduced during the COVID 19 pandemic in 2021. The teachers discussed the positive impact the devices made on the learning experiences of their pupils. The teachers were able to use hybrid learning, teaching both in class and directly into children’s homes via Microsoft Teams providing continuous access to lessons and classroom activities.

*...they can be involved in classroom activities by streaming into the class...* T5

*It was really useful during lockdown...All children were able to use Teams to continue and extend their learning at home. T2*

Some teachers expressed negativity towards the introduction of 1-2-1 devices and its use as AT within the setting. T11 felt that there were “…less opportunities to write...”. Whilst T6 said that the use of AT “…can take away from their general confidence when it comes to a written task on paper.”

The teachers reported they felt that their teaching practices had been improved and hindered by the use of 1-2-1 devices in the classroom as well as its use as AT for children with SpLD.

Some respondents felt conflicted by their own lack of confidence with the devices but also the need for them to support and encourage the independent use, particularly for children with SpLD, of AT in their classrooms.

*It has taken me sometime to become confident using IT myself without trying to support the children who need assistive technology to support their learning. T2*
Yet, other teachers felt confident in their abilities using technology but also supporting their children.

*I feel confident in my own ability using the technology and therefore I am able to pass on that information clearly and concisely.* T10

Although many teachers wished to support the use of AT with children who had SpLD they often felt that they lacked both the knowledge, time and resources to do this properly. At times, measures handed down from head office which had no knowledge of the setting, or the requirements of the children made it difficult for effective teaching practices to be implemented.

*...it is regrettable that...software has been recommended for use by external professionals...the use of them is blocked by external sources.* T3

*My knowledge of apps and websites to use is also a barrier as I can only use the apps I know about.* T7

The teachers made quite a few recommendations which, if addressed would improve their use of AT with children who have SpLDs and improve their teaching practice. They felt specific lessons for children using their devices as AT would support both students and teachers thus ensuring that the children were able to use their devices independently and confidently.

*All of the technology is great and can help but often needs teaching around how to use it and make it worthwhile.* T10

More training (T3, T2) regular sharing of knowledge, information and good practice would improve individual teaching practice and use of AT. While the frustration of malfunctioning and inaccessible technology would benefit, respondents believed, by less corporate influence from head office and greater autonomy within the setting.

*One teacher in the school could have the admin password and we could go and see them and discuss what we wanted to change and why and do it instantly rather than waiting for weeks/months to change something relatively simple, such as access to a microphone.* T4

Previous research (Kohlmeyer and Edyburn, 2022; Chambers et al.; Cumming and Strnadová, 2020) suggested that teachers often found it hard to differentiate lessons for learners with SpLDs and to integrate AT successfully into lessons creating a
negative impact on learning. However, teachers within the setting noted that they were able to ‘individualise learning’, make sure work wasn’t ‘obviously different’ and allow learners to work at their own pace. The teachers thought that they were creating positive learning experiences for the children. Perhaps this is linked to new teaching practices developed due to teaching online during the pandemic and the use of hybrid learning teaching practices. Malandrino and Sager (2021) found that the time taken by teaching professionals to acquire new digital skills, during the pandemic, has contributed to improved teacher professionalism and practice. Whilst Teruya (2020) and Sahlberg (2020) suggest that new technologies have increased the possibility of developing new pedagogical practices.

It may be possible to speculate that the negativity expressed by teachers is less of a problem with AT and 1-2-1 devices but rather the resistance by teachers to changes to their teaching practices and their inability to embrace alternative ways of learning and presentation required by the children with SpLD. The use of the terms “write” and “written” may mean that teachers within the setting are maintaining a particular pedagogical belief about what “good” education looks like (Kohlmeyer and Edyburn, 2022) and a general negative attitude towards AT (Ahmed, 2018). Kim, Leary and Asbury (2021) suggest that since the pandemic teachers need to be more reflective thinking about the needs of pupils and become more flexible, creative and holistic in their practice.

Teachers within the study commented that training, knowledge of AT applications, organisational and IT difficulties as well as the swift implementation of Edtech into the setting has been a barrier to the use of AT aligning with previous research (Kohlmeyer and Edyburn, 2022; Chambers et al., 2021; Chambers, 2020; Schock and Lee, 2016).

- The themes AT Meaning and AT Currently Used in the Setting looked at the ways teachers within the setting understood and defined AT. Whilst the second theme looked at AT currently used in the setting by teaching staff showed that the use of Low, Mid and High Tech and is represented visually (see Fig.10).

The teacher responses regarding the meaning of AT showed a good level of understanding and definitions were broadly in line with the most common definition (IDEA, 2004) used in AT research (See Section 2.1).
Technology used to assist a SEN or Neuro Atypical learner to access school facilities & curriculum, as well as demonstrate their learning & understanding. (T3)

The terms enhance, and support were also frequently used to describe AT as well as technology to overcome barriers to learning which according to WHO (2020) is a priority for the use of AT in educational settings.

Technology that supports and assist any child with specific special needs. (T8)

Technology that can be used to support and enhance children's learning. (T7)

By speaking directly to children with SpLDs in this study, the researcher has been able to gather information to better understand how AT was used in a private prep school by both pupils and teachers. As Schock and Lee (2016) and Wright et al (2011) have stated, very few children with SpLDs have been asked about their use of AT. The children in this study have had the opportunity to voice their experiences of using AT by working ‘with’ the researcher (Carroll and Twomey, 2021) as the narrators of their feelings and perceptions. The incorporation of the perspectives of the teachers, who guided the use of devices as AT, provided a holistic and rounded approach to this study.

Fig.10 AT currently used by teachers in the setting adapted from Chambers (2020)
Chapter 5 Conclusion and Implications

This final chapter will consider the limitations of the research, draw conclusions from the research completed and identify implications for future practice looking towards improving and further developing the use of AT within the setting.

5.1 Limitations

The choice of case study approach was limited because the conclusions of the case study could make inaccurate assumptions if applied to wider contexts outside the context of the current setting. However, an understanding of the experiences of this setting’s use of AT, may be of interest to the global educational group, which the setting is part of. Yin (2003), is critical of the approach because it represents a limited number of participants. Familiarity with the setting means that the responses of the child and teacher participants may have been influenced by relationship to the researcher (Sheffield University, 2021; Ponizovsky-Bergelson et al., 2019 Punch, 2002).

The interpretation of the responses, by thematic analysis, made data analysis ethically difficult because of the lack of experience of the researcher (Appendix G, grid point6). Similarly, Smith (1991) cited in Cohen, Manion and Morrison (2017), suggests that because the study is linked to the interpretivist paradigm the reliability and validity of the evidence presented could be questioned. The interpretation of the results is subjective, only interpreting opinion gathered on one day. James (2007) observed, that the point of view being presented may be that of the researcher not of the children or adults who participated in the study.

5.2 Implications

The children interviewed as part of this case study identified that two improvements for better AT use: choice and peer to peer support. The movement away from directed use of AT by teachers to a more autonomous use of AT in the classroom by children with SpLD should be explored. Peer tutoring and cooperative learning from a
constructionist perspective would be beneficial, therefore this suggestion, from the children within the study could be implemented.

The research indicated that there were concerns and worries about the haphazard integration of Edtech. Cumming and Strnadova (2020), suggest that schools and teachers adopt models and frameworks such as the Universal Design for Learning (UDL) (CAST, 2020) or Technological Pedagogical Content Knowledge (TPCK) (Mishra and Koehler, 2006). These models could address concerns, within the setting about teachers' willingness to integrate Edtech into their pedagogy and develop effective support for the provision of training, sharing of knowledge and resources, etc.

The continued need to actively involve children in research is important as they can provide a powerful narrative of their experiences and help develop future practice using AT. A longitudinal study, following children with SpLD over a four-year period, from Y3-6, would provide further evidence of the impact of the use AT. This research, in the form of a mixed method or action research approach, could include: observational data of classroom use of AT, quantitative data in the form of standardised assessments, integration of Pupil Attitude to Self and School (PASS) assessments; further interview data from teachers and children; and seeking the views of parents. This could provide more robust data than that provided by the current research. As part of a global education group, the research could be done in parallel with a different setting to compare results and widen the context.

5.3 Conclusion

The aim of the study described in this dissertation was to examine, using a case study approach, pupil and teacher perceptions of the use of AT. Gaps in previous research relating to the lack of children’s voice connected to experiences using AT (Carroll and Twomey, 2021); the notion that school experience affects learning experiences using AT (Bronfenbrenner, 1984); the provision of alternative ways to present knowledge; whether children are given a choice of ways to participate in the curriculum and the link to wellbeing and AT (Chambers, 2020; Maslow 1943).

The research has sought to ensure that the children with SpLDs were at the forefront of the research and that the children were given the opportunity to voice and narrate
their experiences of using AT. The study has attempted to address the underrepresentation of children’s voice in AT research (Carroll and Twomey, 2021; l’Anson and Weston, 2018; Schock and Lee, 2016; Wright et al., 2011)

Both children and teachers felt that the use of AT had been positively influenced by the school ethos of inclusion and the use of 1-2-1 devices by all children (Chambers, 2020; Bronfenbrenner, 1984). This has promoted positive attitudes towards themselves as learners (Milheim, 2012), by the children, who were happy and excited to engage in learning. A variety of creative applications have been used to show knowledge and learning making a positive impact on their learning and school experience. Teachers have noted, this has had a positive impact on wellbeing (Chambers, 2020). In common with previous research, experiences using AT were negatively impacted by technical difficulties; lack of necessary skills to use AT proficiently by both children and teachers and the lack of training and knowledge of applications by teachers (Kohlmeyer and Edyburn, 2022).

Most importantly, however, the research found that teachers were concerned the children were not using traditional methods of presentation of knowledge (Kohlmeyer and Edyburn, 2022; Ahemed, 2018). In contrast, the children wanted more autonomy, to choose how they presented their knowledge and learning, as well as being able to use AT in the classroom. This would mean moving away from traditional methods still favoured by some teachers, which currently do not accommodate the SpLDs of the children using AT. Teruya (2020) and Sahlberg (2020) suggest that new technologies have increased the possibility of developing new pedagogical practices which the researcher believes should be embraced. Furthermore, Kim, Leary and Asbury (2021) suggest that since the pandemic teachers need to be more reflective thinking about the needs of pupils and become more flexible, creative and holistic in their practice. The resolution to this dilemma will not be easy. However, it is hoped that this study and its findings when presented to the Senior Leadership Team and Education Teaching and Learning Team, will enable them to begin to find a way forward. It is time perhaps, as Hollweck and Doucet (2020) suggest, to reflect and evaluate upon which approaches that are worth continuing, those which need developing and those practices which need to be left behind.
Postscript Narrative Critical Reflection

The trouble with deciding to return to university, to do a Master’s degree, following a 30-year gap between your undergraduate degree (and PGCE), is that you feel exceptionally out of depth with regard to your abilities. During my Masters journey, and during the E822 Dissertation Module, I felt ill equipped and did not have the same set of skills sets as my peers who had recently completed their undergraduate studies. PDP audits were helpful, and I concluded that I needed to feel confident enough to complete the thematic analysis on my raw data to ensure validity and reliability, Ethical Grid point 23 (Stutchbury and Fox, 2009) found in Appendix G. The points discussed in this reflection have been highlighted on the Reflection Grid (See Appendix L).

I researched a variety of analytics tools which could help with coding and thematic analysis (QUIRKOS, Delve, MAXQDA). I also read Clarke and Braun (2006, 2019) and Cohen et al. (2017) to better understand how thematic analysis should be performed. The analytics tool Delve (2022) was selected to enable me to: create and edit codes for both interview and questionnaire data; organise data once highlighted under the codes; nest codes and create overarching themes (see Appendix J, Fig. 8). I also completed a course which enabled me to better understand how to “do” thematic analysis. The understanding that thematic analysis can be both inductive and deductive in nature and that codes and can be expanded using noun based, in vivo codes and verb-based codes was helpful. (See Section 3.5) For the novice researcher this was immensely helpful and enabled me to feel confident that I was doing my utmost to make my data both valid and reliable.

One of the main reasons for this study was to improve my professional practice, particularly regarding the subject matter of my dissertation and most importantly to improve the use of AT for the children who I teach. I constantly referred to my Ethical Researcher course to make sure that I was doing things ethically. My dilemmas about participants was selection and making sure that I did not cause undue emotional harm by including them in my study. I used the Ethical Grid by Sutchbury and Fox (2009) (Appendix G, Grid Point 9) which discussed risk and identified that the children could at risk of lowered self-esteem and self-confidence. I chose to use positive language, made the interview fun and made sure the children understood how important their voice was to making change in school.
Regarding participant selection, I made sure that I discussed my dilemma with my Headteacher/Gatekeeper and SENDCo. To better improve my understanding of participant selection I also read around the subject. I followed the suggestions of Sharma (2017) and Schock and Lee (2016) and used the process of purposeful selection to select a small group of children who fitted my research criteria.

So now, at the twilight of my career and at the end of my Master's journey, I don't feel so out of depth, I'm more positive about my abilities as a student and researcher and feel my professional practice has benefited from my studies and reflections. Maybe you can teach an old student new tricks! Who knew?
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Appendices

Appendix A: Initial Letter to parents and children

Dear Parents,

Request for assistance with Masters research

I am writing to you as your child is currently being supported by their class teacher and the SENDCo because they have a Register of Concern or an Individual Education Plan.

I am currently studying for my MA in Childhood and Youth with the Open University. I am in my final year, and I am about to begin my dissertation. Mrs xxxxx has kindly allowed me to conduct a small-scale investigation at xxxx’s as part of my dissertation. My dissertation is focusing on the use of assistive technology by children who may have or have been identified with specific learning disabilities. The aim of my research is to understand how assistive technology is used by the children, barriers to its use and improvements to the use of assistive technology suggested by the children. I believe that the outcome of my research will be beneficial to the children with specific learning disabilities currently at xxxxx and those who come to xxxx’s in the future.

As part of my research, I hope to interview a few children 1 to 1 to discuss their experience of using assistive technology in the classroom and the impact it has made on their learning. Participation in my research would be voluntary and strictly confidential. Neither you nor your child will be at any disadvantage if they do not wish to take part.

If you and your child are interested in learning more and possibly participating in my research, then please complete the form below and return to the School Office. Once returned I can then provide you with more information and a consent form to complete with and on behalf of your child.

Yours sincerely,
Ms. Katharine Williams

BSc Hons, PGCE, PGDip CYS (Open)

I am interested/not interested (delete applicable) in my child __________________________(name) in class _________ participating in your MA dissertation research project.

Please sign below.

Name:__________________________

Signed:_____________________________

If you have indicated that you are interested in learning more I will send more information and a consent form to complete with your child.
Appendix B: Further Information Letter and child friendly consent form

Dear Parents and Children,

E822 Information letter for children and young people (pre-18): Interviews

Thank you for responding to my request for assistance for my Master dissertation. You have indicated that you would like to have further information about my research. Below you will find more information about the research I intend to do, and you will also find attached a child friendly consent form. Please take the time to read this information letter together with your child as it is very important that both you and your child understand how and why I am conducting my research.

What is the aim of this interview?
The aim of the interview is to gain your view on what the use of assistive technology is like at xxxx School. An interview is like a conversation, and I will be asking you some questions

Who is conducting the research and who is it for?
This interview is part of my studies on a masters-level course at The Open University in which I am carrying out a small-scale investigation. I am using a range of ways of collecting information to answer the following questions:

How do pupils with specific learning disabilities perceive themselves as learners?

How do pupils with specific learning disabilities think assistive technology has impacted their school experience?

This is aimed to help me better understand and develop the use of assistive technology for you here at school and to share my findings with others for whom the findings will be relevant to changing practice.

Why am I being invited to participate in this research?
You have been chosen because your views would be valuable in answering the question set for the study and I hoped you might be prepared to talk to me about your experiences and opinions.

If I take part in this research, what will be involved?
The interview should take no more than 60 minutes and I will make sure that I have checked with your teachers that when and where we talk is the most convenient for you and them. Permission has been given from Mrs xxxx for me to invite you to this interview. I would like to ask your consent to make an audio recording of our discussion so that I can refer to what was said more accurately than would be possible just from my notes. If you do not wish to be audio recorded, I will accept your wish, and rely only on my written notes. Only I will have access to the audio recording. I do not need to share this with those at the University or at school. In any part of the interview which will be shared with my tutor or form part of the final dissertation report you and anyone else you name during our discussion will be referred to by the pronouns they/them/their.
What will we be talking about?
In the interview I will talk to you and ask questions about what you think about: yourself as a learner, how you use your device, how your device helps you with your learning and if you have any ideas how we could improve what we do. I can share the questions with you in advance, if you would like to see them.

Will what I say be kept private?
Your participation will be treated in **strict confidence** in accordance with the Data Protection Act (2018). No personal information about you, such as contained in your consent forms, will be shared more widely. In the case of the audio recording and my notes of the interview, these will be kept private only to me and typed up as soon as possible. However, if you let me know anything during your interview which I consider means that you might be unsafe or have been involved in a criminal act, because this is a safeguarding concern, then I would need to involve Mrs xxxxxxx our Designated Safeguarding Lead. When I make anonymised records of the interview, as outlined above, these will be stored securely on a password protected device and the original notes and recording will then be destroyed. I can confirm that neither you as an individual nor the school will be identifiable in my submissions to the University or any presentations, I make of my findings to interested audiences.

What happens now?
After reading this information sheet with your parent/carer, please read and complete the consent form. This means that you and your parent/carer sign your and their names and the date to say you are all happy for me to set up a time and place for the interview. Whether you agree or not is entirely up to you and your parent/carer, as the invitation is for you to take part voluntarily. You can change your mind later and withdraw from the study by letting me know and I will destroy the information (consent forms and interview files) I have created. This will be possible up until the time I am using your information as part of my assessment 1.6.22.

What if I have other questions?
If you have any questions about the study, I or my tutor at the University would be very happy to answer them. Please contact me at kxxxxxxx.wxxxxxxx@xxxxxx.com or **you can speak to me in person** or contact Mrs xxxx xxxx.xxxxx@xxxxxxxxxxxx.co.uk.

The ethics protocols and documentation to support the E822 Multi-disciplinary Dissertation: Education, Childhood and Youth have been developed with advice from the Open University Human Research Ethics Committee and have been confirmed by the Chair as fully compliant with The Open University’s Ethics Principles for Research with Human Participants.


Yours sincerely,

Ms. Katharine Williams

BSc Hons, PGCE, PGDip CYS (Open)
ECYS/WELS

E822 INTERVIEWS CONSENT AND ASSENT FORM
(To be completed by all participants and, if the participant is a child/young person under age 18, with and by their parent/carers/guardian)

<table>
<thead>
<tr>
<th>Emotion Icon</th>
<th>Statement</th>
<th>��</th>
<th>��</th>
</tr>
</thead>
<tbody>
<tr>
<td>😊📚</td>
<td>I have listened to the information about this interview</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>😐📚</td>
<td>I have had the information explained to me</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>😊😊</td>
<td>I understand what this interview is about</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>😐😊</td>
<td>I have asked questions to help me understand</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>👍😊</td>
<td>I have had my questions answered</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>😊😊</td>
<td>I can stop taking part at any time</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>👍😊</td>
<td>I am happy for my answers to be recorded</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>👍😊</td>
<td>I am happy with how my answers will be stored</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>👍😊</td>
<td>I know that no one will know who I am</td>
<td>��</td>
<td>��</td>
</tr>
<tr>
<td>😊😊</td>
<td>I am happy to take part</td>
<td>��</td>
<td>��</td>
</tr>
</tbody>
</table>

If any answers are ‘no’ you can ask more questions. But if you don't want to take part, please let me know and don't sign your name.

If you do want to take part, please write your name and today’s date.

Your name ___________________________

Date ___________________________

If the person to be interviewed is a child or young person under 18 and you are happy for the child or young person you are responsible for (as their parent, carers or guardian) to participate, please could you also sign and date below.

Print name ___________________________

Sign ___________________________

Date ___________________________

Return form to Ms. Williams via school office by Wednesday 4th May 2022

Thank you for your help.
Appendix C: Teaching Staff Information Letter

Faculty of Wellbeing, Education, Language and Sport

Study related to Masters module ‘E822 Multidisciplinary Dissertation: Education, Childhood and Youth’

For participants invited to complete a questionnaire

E822 Information Letter: Questionnaires

Dear Colleagues,

I am currently studying on the Masters module ‘E822 Multidisciplinary Dissertation: Education, Childhood and Youth’ at the Open University in the Faculty of Wellbeing, Education, Language and Sport. My studies are being supervised at xxxxs by Mrs xxxx who can be contactable via: xxxx.xxxxx@xxxxxxxxxxx-xxxxxxxx.co.uk and am following research protocols recommended by the University which have been approved by a named supervisor in this setting. I am using a range of ways of collecting information to answer the following question:

What are teacher perceptions of the use of assistive technology for children with specific learning disabilities, how has it impacted on their teaching practice and the learning experience of children with SpLD?

This is part of a small-scale investigation aimed at helping to better understand and develop knowledge and practice of the use of assistive technology for children with specific learning disabilities here and to share my findings with others for whom the findings will be relevant to changing practice.

I invite you to complete a survey by questionnaire in xxxx’s School. The questionnaire is estimated to take no longer than 30 minutes. This is to be completed on online and I would appreciate the return of the questionnaire by 20.5.22. This has been agreed with the organisational leadership of Mrs xxxx xxxx, Headteacher of xxxx’s School. Please feel free to ask me any questions about the questionnaire in advance of offering your consent to participate.

Information collected will be de-identified and kept confidential, being stored securely on a password protected device. In the case of paper copies of the questionnaire these also will be kept confidential, and responses typed up as soon as possible. The original notes will then be destroyed. If you do not consent to participate, this is fine: simply do not complete the questionnaire. It is not possible to withdraw your consent because the questionnaires are de-identified and therefore cannot be identified for removal.

If you consent, please complete and return the questionnaire. If you would like more information about the questionnaire before completing it, please contact me on Kxxxxxxxx.Wxxxxxxx@xxxxxx.com

Yours sincerely,

Katharine Williams

The ethics protocols and documentation to support the E822 Multi-disciplinary Dissertation: Education, Childhood and Youth have been developed with advice from the Open University Human Research Ethics Committee and have been confirmed by the Chair as fully compliant with The Open University’s Ethics Principles for Research with Human Participants.

Appendix D: Screen shot of forum contribution(a)

I think you are totally right not to use interviews for such sensitive subject. When we (Wellbeing Team) began looking at staff wellbeing at school we realised that colleagues did not want to discuss wellbeing particularly even with colleagues. There was a genuine fear of reprisal from Leadership if responses were negative towards school. In the end, we, 3 members of staff with no links to SLT, did an anonymous questionnaire, which did not ask for any personal information just answers to the questions we developed. Even when we explained that the questionnaire was totally anonymous there was some reluctance from colleagues as the school already did an Employee Questionnaire which was supposedly anonymous but leadership worked out who people were by the personal information asked for e.g. gender, years in role and department. This is why we did not ask for that information. The responses were really informative even if Leadership disliked the outcome.
Appendix E: Screen shot of forum contribution (b)

This was my concern about questionnaires for children with literacy difficulties as you are making it more difficult for the to read the questions. If you are using tick boxes then you are only giving a very narrow choice of answer surely children should be given the opportunity to voice what is truly happening in their own words. I don’t like Likert Scales either as they are confusing for children.

I briefly considered a questionnaire for my plan B but having seen children with good literacy skills try and interpret questions on the endless online questionnaires used in school for well being and mental health which cause anxiety and stress I decided not to pursue this as an option.

I do think you are right that the people participating influence choice of method.

For give me for rambling I have COVID brain.
Appendix F: Questions for teachers and children

Teacher questions

1. What does the term assistive technology mean to you?

2. What assistive technology have you used in the classroom?

3. Which assistive technology apps have you used in the classroom?

4. How has the introduction of 1-2-1 devices affected the learning experience of ALL learners in your classroom?

5. Thinking specifically about children with specific learning differences in your class how has the introduction of 1-2-1 devices affected learning experience/outcome for these children? Can you give examples?

6. Which applications do you regularly use with children who have specific learning differences? Do you think that they have enabled the children to overcome barriers to learning? If yes, then how? If not, why not?

7. Does the use of assistive technology positively or negatively affect the wellbeing of children with specific learning differences? If positive, then how? If negative, then how?

8. In what way do you feel that you are able/confident to support children using assistive technology? What barriers do you face?

9. What would improve your ability to support children with specific learning differences and their use of assistive technology?

10. Please read the comment below. If you are happy to proceed select the option and submit your form. If you no longer wish to participate then please do not submit the form.

* Yes, I understand that once this form is submitted that I have given my consent to participate in this study and that my responses cannot be withdrawn because they have been de-identified.
Children’s Guide Questions

Is school easy or hard for you? Why?

How do you feel about yourself as a learner? Has this feeling changed since you got your device? In what way? If not, why not?

Can you tell me about how your device helps you with your schoolwork? Do you use any specific applications? Can you show me how they work? Do you feel confident using them?

Are there any other tools/apps that help you with your learning that you like to use? What is it called? How does it work? Can you show me?

Is it easy to use these applications? How is it easy? If it isn’t easy to use them, why is that?

When do you usually use your device? What would you be doing?

Has your teacher been involved in your use of your device to help you with your schoolwork? Have they shown you how to use Immersive Reader or dictation? How helpful/unhelpful have these applications been to you?

How do you think school could improve (make better) the way you use your device?

How does using your device make you feel? Has it made learning easier/better? How has it made learning easier/better?

Do the other children in your class use their devices in the same way that you do?
### Appendix G: E822 Ethical Grid

<table>
<thead>
<tr>
<th>Ethical Grid</th>
<th>Question to consider</th>
<th>Your thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cultural sensitivity</strong></td>
<td>1. What are the values, norms and roles in the environment in which I am working and are they likely to be challenged by this research?</td>
<td><strong>Power imbalances</strong>&lt;br&gt;- Sensitivity towards the children who have been to ensure that they are not adversely affected by questioning&lt;br&gt;- Working practices may be challenged</td>
</tr>
<tr>
<td><strong>Awareness of all parts of the institution</strong></td>
<td>2. What is the relationship between the group/individual I am working with and the institution as a whole? How does it affect the participants?</td>
<td><strong>Maintaining anonymity is a priority</strong>&lt;br&gt;- Be aware that as an insider, I must not use information that I have not been explicit permission to use&lt;br&gt;- Avoid discussing research with colleagues&lt;br&gt;- Mindful of time constraints of participants</td>
</tr>
<tr>
<td><strong>Responsive communication – awareness of the wishes of others</strong></td>
<td>5. How might my work be viewed/interpreted by others in the institution? How will the language I use be interpreted?</td>
<td><strong>Language may be interpreted as critical when reporting results. Feedback should be constructive, diplomatic and using non-academic terminology which can be used as indicative when it is particularly important that the research is seen as inclusive.</strong></td>
</tr>
<tr>
<td><strong>Responsibilities to sponsors</strong></td>
<td>4. What are my responsibilities to the people paying for or supporting this research (funding authority, my school, external bodies)?</td>
<td><strong>To utilise time and resources effectively</strong>&lt;br&gt;- To be open and honest at all times&lt;br&gt;- To utilise research for the benefit of all participants and setting</td>
</tr>
<tr>
<td><strong>Codes of practice</strong></td>
<td>5. Have I worked with the British Educational Research Association guidelines? Are there other relevant codes which might also be applicable? Am I aware of my rights and responsibilities through publication?</td>
<td><strong>The ERA Code was used</strong>&lt;br&gt;- <strong>Becoming and Ethical Researcher course used and passed</strong>&lt;br&gt;- <strong>IOC 2012</strong>&lt;br&gt;- <strong>British Psychological Society Code 2014</strong></td>
</tr>
<tr>
<td><strong>Efficiency/use of resources</strong></td>
<td>6. Have I made efficient use of the resources available to me, including people’s time?</td>
<td><strong>Lack of experience affected the way</strong>&lt;br&gt;- <strong>Thematic analysis was carried out</strong>&lt;br&gt;- <strong>Interviews and questionnaires were completed in a short time to avoid wasting precious time</strong>&lt;br&gt;- <strong>Researcher gave up a lot of time</strong></td>
</tr>
<tr>
<td><strong>Quality of evidence on which conclusions are based</strong></td>
<td>7. Have I got enough evidence to back up my conclusions and recommendations?</td>
<td><strong>Interview transcripts and questionnaire responses</strong></td>
</tr>
<tr>
<td><strong>The law</strong></td>
<td>8. What legal requirements relating to working with children do I need to comply with? Am I aware of the data protection responsibilities? Am I aware of the need for disclosure of criminal activity? Do I need written permissions?</td>
<td><strong>School safeguarding policy</strong>&lt;br&gt;- <strong>Company safeguarding policy</strong>&lt;br&gt;- <strong>Keeping Children Safe in Education</strong>&lt;br&gt;- <strong>Enhanced Disclosure</strong>&lt;br&gt;- <strong>Permission from Headteacher to complete the research in school</strong>&lt;br&gt;- <strong>Permission for Interviewers: informed consent and information sheets provided to under 18 participants</strong>&lt;br&gt;- <strong>Permission for Questionnaires: consent on the questionnaire and information sheets emailed to all staff</strong></td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td>9. Are there any risks to anyone as a result of this research?</td>
<td><strong>Children may be at risk of lowered self-esteem and self-confidence as we are discussing their SEL and how it affects their learning and school experience</strong></td>
</tr>
<tr>
<td><strong>Consequential/telethetical</strong></td>
<td><strong>Benefits for individuals</strong>&lt;br&gt;10. What are the benefits of my doing this research to the participants? Would an alternative methodology bring greater individual benefits?</td>
<td><strong>Policy change</strong>&lt;br&gt;- <strong>The ability to have their voices heard</strong></td>
</tr>
<tr>
<td><strong>Benefits for particular groups/organisations</strong></td>
<td>11. What are the benefits of my doing this research to the school department? Could these be increased in any way? How will I ensure that they know about my findings? Is my work relevant to the school development plan? Can I justify my choice of methods to my sponsors?</td>
<td><strong>EdTech is a high priority if the SOP as the school aims to become a Microsoft Showcase school</strong>&lt;br&gt;- <strong>Feedback to Head and SL for EdTech as well as SMP/EC will be provided</strong></td>
</tr>
<tr>
<td>Most benefits for society</td>
<td>12</td>
<td>Is this a worthwhile area to research? Am I contributing to the 'greater good'? Is it a High-quality and open to scrutiny?</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The literature indicates that children who use AT in the classroom are not given the opportunity to voice their own opinions with regard to its use therefore it is worthwhile because it is an opportunity for the children to change teaching practice within the setting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Diagrams of analysis are included in the final report showing questionnaire and interview data.</td>
</tr>
<tr>
<td>Avoidance of harm</td>
<td>13</td>
<td>Are there any sensitive issues likely to be discussed or aspects of the study likely to cause discomfort or stress?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The child participants may become distressed because we will be talking about their perceptions of themselves as learners and this is a sensitive topic for children withSEND.</td>
</tr>
<tr>
<td>Benefits for researcher</td>
<td>14</td>
<td>Am I going to be able to get enough data to write a good thesis or paper? Am I aware of my publication rights? What might I learn from this project? Will it help in my long-term life goals?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The study should provide a better understanding of AI use in the setting, provision and needs of children withSEND.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The study should enable the setting to improve the use of AT for children withSEND.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The study will enable me to reflect on my own teaching practice using AI in my classroom.</td>
</tr>
</tbody>
</table>

**Deontological**

<table>
<thead>
<tr>
<th>Avoidance of wrong – honesty and candour</th>
<th>15</th>
<th>Have I been open and honest in advance with everyone who might be affected by this research? Are they aware that they can withdraw, in full or in part, if they wish?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Questionnaires: the volunteers were informed prior to completion that once the questionnaire was completed the answers could not be withdrawn.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• There was a question on the questionnaire which explicitly asked that the participants understood this.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The children and parents were informed of the right to withdraw in child-friendly terms on the consent form and when the children were</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fairness</th>
<th>16</th>
<th>Have I treated all participants fairly? Am I using incentives fairly? Will I acknowledge everyone involved fairly? Can I treat all participants equally?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• No incentives were used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If interviews could not take place in school time due to timetabling issues then an alternative time was negotiated with pupil and parents. Research gave up own time to do this.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discussions were held with each child to make sure they were happy to do the interview in school and not a neutral venue.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reciprocity</th>
<th>17</th>
<th>Have I explained all the implications and expectations to the participants? Have I negotiated mutually beneficial arrangements? Have I made myself available when those involved might wish me to be? Are the participants clear about roles, including my own, as they relate to expectations?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Staff were aware of the research as it was discussed in a staff meeting to encourage people to volunteer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Children and parents were informed via an initial letter and then an information sheet and child-friendly consent form.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• I was available to speak to in person and via email to staff, pupils and parents.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tell the truth</th>
<th>18</th>
<th>If there is any need for covert research, how will I deal with this? What will I do if I find out something that the participants/school/department do not like? How will I report unpopular findings?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Consent research not required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Unpopular findings will be reported diplomatically and objectively in order to be constructive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Keep promises</th>
<th>19</th>
<th>Have I clarified access to the raw data and how I will share findings, including at publication? How will I ensure confidentiality?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Interview transcripts were validated by children at time of interview</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Questionnaires remain available to participants to view their own contribution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Interview transcripts were made and stored safely on OneDrive accessible via password-protected computer and login to password protected OneDrive. Data will be deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Audio stored safely on OneDrive accessible via password protected computer and login to password protected OneDrive. Audio will be deleted.</td>
</tr>
</tbody>
</table>

interviewed they were also given the option to withdraw at the beginning and end of the interview.
<table>
<thead>
<tr>
<th>Do the most positive good</th>
<th>20</th>
<th>Is there any other way I could carry out this research that would bring more benefits to those involved?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- Paper transcripts stored in lockable storage box and shredded once no longer required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Interviews with adult participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Observations of all use in class but this would have put pressure on colleagues who were</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- already overwhelmed with work and there was no time in my work schedule to do this as I am</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- also a FT teacher in the setting.</td>
</tr>
</tbody>
</table>

**Relational/Individual**

<table>
<thead>
<tr>
<th>Genuine collaboration/trust established</th>
<th>21</th>
<th>Who are the key people involved? How can I build a constructive relationship with them?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- Key participants were children and colleagues – the majority of whom I had taught at one point</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- within the setting or colleagues that I worked with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- As an insider researcher I had constructive relationships with all participants</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Avoid imposition/respect autonomy</th>
<th>22</th>
<th>Am I making unreasonable or sensitive demands on any individuals? Do they appreciate that participation is voluntary?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- All adults were invited to participate in the research and it was a voluntary choice to participate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Questionnaires for adults were used because of time constraints and busy schedules. The questionnaires</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- allowed the adults to complete the questionnaires if they chose to do so in their own times.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Important to acknowledge that participants were volunteering to participate. Times and places</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- were negotiated with participants especially with child participants when interviews had to be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- completed after school. Consent was asked for from parents but the children also had to agree to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- these times.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Confirmation of findings</th>
<th>23</th>
<th>What steps will I take in my methodology to ensure the validity and reliability of my findings? Can I involve</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- Interviews: reliability checked by interviewees</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respect persons equally</th>
<th>24</th>
<th>How will I demonstrate my respect for all participants? Have I treated pupils in the same way as teachers?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- Interviews: validity the researcher is a novice and inexperienced; pilot study conducted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Questionnaires: reliability checked by pilot study participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Questionnaires: validity researcher is a novice and inexperienced; pilot study conducted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Thematic Analysis: reliability; had not been undertaken by the researcher before therefore there could be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- errors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Thematic Analysis: validity; had not been undertaken by the researcher before therefore there could be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- errors</td>
</tr>
</tbody>
</table>

The children were treated with respect and consideration.
- The children were always asked if they were happy to continue with the research or activities within the research.
- To avoid a potential power imbalance the children were always approached indirectly to avoid them feeling pressured into assisting me.
Appendix H: Ethical Appraisal Form and Data Protection Plans

E822 Ethical Appraisal Form
Masters: Education, Childhood and Youth

NB: it should be noted that The Open University is unable to offer liability insurance to cover any negative consequences students might encounter when undertaking ‘in-person’ data collection. It is therefore very important that you follow appropriate research protocols which should include seeking Gatekeeper permissions to undertake any data collection within your setting and adhering to ethical principles for the safety of yourself and your participants.

Fill in section 1 of this document with your personal details and brief information about your research.
For section 2, please assess your research using the following questions and click yes or no as appropriate. If there is any possibility of significant risk, please tick yes. Even if your list contains all “no” you should still return your completed checklist so your tutor/supervisor can assess the proposed research.

Because ethical appraisal should precede data collection, a completed version of this form should be included with TMA02 for those developing a Small-Scale Investigation (SSI) and as part of the EMA submission for those completing an Extended Literature Review and Research Proposal (EP) form of the Dissertation.

Section 1: Project details

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Student name</td>
<td>Katharine Williams</td>
</tr>
<tr>
<td>b.</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Project title</td>
<td>Using assistive technology with children who have specific learning disabilities in an independent prep school: a qualitative study of children’s and teacher’s perceptions.</td>
</tr>
<tr>
<td>d.</td>
<td>Supervisor/tutor</td>
<td>Dr Katie Rix</td>
</tr>
<tr>
<td>e.</td>
<td>Qualification</td>
<td>Masters in Education</td>
</tr>
</tbody>
</table>
**Masters in Childhood and Youth**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>f.</td>
<td>MA pathway (where applicable)</td>
</tr>
<tr>
<td>g.</td>
<td>Intended start date for fieldwork</td>
</tr>
<tr>
<td>h.</td>
<td>Intended end date for fieldwork</td>
</tr>
<tr>
<td>i.</td>
<td>Country fieldwork will be conducted in</td>
</tr>
</tbody>
</table>

If you are resident in the UK and will be conducting your research abroad please check [www.fco.gov.uk](http://www.fco.gov.uk) for advice on travel.

**Section 2: Ethics Assessment**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Does your proposed research need initial clearance from a ‘gatekeeper’ (e.g. Local Authority, head teacher, college head, nursery/playgroup manager)?</td>
<td>• <strong>Headteacher of setting</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have you checked whether the organisation requires you to undertake a ‘police check’ or appropriate level of ‘disclosure’ before carrying out your research?</td>
<td>• <strong>Researcher works within the setting an has Enhanced DBS</strong></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Have you indicated how informed consent will be obtained from your participants (including children less than 16 years old, school pupils and immediate family members)? Your consent letters/forms must inform participants that they have the right to withdraw from the study at any time.</td>
<td>• Information letters will be sent out to parents/carers/guardians and children explaining the aims of the research and that they have a right to withdraw at any time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consent will be obtained from parents/carers/guardians and assent from each child will be sought via an adapted child friendly form.</td>
<td>• Gate keeper consent form has been completed by headteacher</td>
<td></td>
</tr>
</tbody>
</table>

---

2 You must agree to comply with any ethical codes of practice or legal requirements that maybe in place within the organisation or country (e.g. educational institution, social care setting or other workplace) in which your research will take place. If required an appropriate level of disclosure ('police check') can obtained from the Disclosure and Barring Service (England and Wales), Disclosure Scotland, AccessNI (Northern Ireland), Criminal Records Office (Republic of Ireland), etc.

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2 This should normally involve the use of an information sheet about the research and what participation will involve, and a signed consent form. You must allow sufficient time for potential participants to consider their decision between the giving of the information sheet and the gaining of consent. **No research should be conducted without the opt-in informed consent of participants or their caregivers.** In the case of children (individuals under 16 years of age) no research should be conducted without a specified means of gaining their informed consent (or, in the case of young children, their assent) and the consent of their parents, caregivers, or guardians. This is particularly important if your project involves participants who are particularly vulnerable or unable to give informed consent (e.g. children under 16 years, people with learning disabilities, or emotional problems, people with difficulty in understanding or communication, people with identified health problems). There is additional guidance on informed consent on the Masters: Education and Childhood and Youth website under Project Resources.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 4 | • Teachers participating in the study will complete a consent form to participate in the questionnaire.  
   | Will your proposed research design mean that it will be necessary for participants to take part in the study without their knowledge/consent at the time (e.g., covert observation of people in non-public places)? If so have you specified appropriate debriefing procedures?  
   | • No |
| 5 | • No  
   | Does your proposed design involve repetitive observation of participants, (i.e. more than twice over a period of more than 2-3 weeks)? Is this necessary? If it is, have you made appropriate provision for participants to renew consent or withdraw from the study half-way through?  
   | • NO |
| 6 | • Audio and/or video data is proposed to be collected during interviews. Video of interviews will be downloaded from STREAM which in accordance with the Safeguarding protocols of the organisation are held for 28 days on STREAM and then deleted. Access to STREAM is password protected.  
   | Are you proposing to collect video and/or audio data? If so have you indicated how you will protect participants’ anonymity and confidentiality and how you will store the data?  
   | • The recordings will be stored on a password protected device/drive, and once transcribed will be deleted.  
   | • Hard copies of transcribed data will be held in a locked file and shredded once the report is complete. Transcripts from participants who withdraw will be shredded immediately.  
   | • Hard copies of questionnaire data will be held in a locked file and shredded once the report is complete. Transcripts from participants who withdraw will be shredded immediately  
   | • If participants decide to withdraw from the project, then their data will be permanently deleted.  
   | • Anonymity will be protected during all stages of the research using gender-neutral pronouns or pseudonyms.  
   | Does your proposal indicate how you will give your participants the opportunity to access the outcomes of your research (including audio/visual materials) after they have provided data?  
   | • Participants will be given the opportunity to listen to or read the transcript of the interview. The participants may note misinterpretations.  
   | • The final research report will be made available to the setting.  
   | Have you built in time for a pilot study to make sure that any task materials you propose to use are age appropriate and that they are unlikely to cause offence to any of your participants?  
   | • Yes, a small pilot study will/can be carried out using randomly selected children and teachers.  
   | Is your research likely to involve discussion of sensitive topics (e.g. adult/child relationships, peer relationships, discussions about personal teaching styles, ability levels of individual children and/or adults)? What safeguards have you put in place to protect participants’ confidentiality?  
   |   |

1 Where an essential element of the research design would be compromised by full disclosure to participants, the withholding of information should be specified in the project proposal and explicit procedures stated to obviate any potential harm arising from such withholding. Deception or covert collection of data should only take place where it has been agreed with a named responsible person in the organisation and it is essential to achieve the research results required, where the research objective has strong scientific merit and where there is an appropriate risk management and harm alleviation strategy.

4 Where participants are involved in longer-term data collection, the use of procedures for the renewal of consent at appropriate times should be considered.
There is a possibility that the ability level of children about themselves and by teachers may be discussed. Gender neutral personal pronouns will be used to make sure that participants cannot be recognised.

Does your proposed research raise any issues of personal safety for yourself or other persons involved in the project? Do you need to carry out a ‘risk analysis’ and/or discuss this with teachers, parents and other adults involved in the research?

- Yes, when interviewing the children, I will be alone in the classroom with them. I will self-report to the DSL and follow the safeguarding guidance for working alone with children for the setting.
- DSL has also suggested that they hold a copy of the questions alongside a self-report form for safeguarding purposes to protect both the children and the researcher.

Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?

- NO

Will the study involve recruitment of patients or staff through the NHS or the use of NHS data?

- NO

If you answered ‘yes’ to questions 12, you will also have to submit an application to an appropriate National Research Ethics Service ethics committee (http://www.nres.npsa.nhs.uk/).

**Data Protection plan**

- **Paper Documentation:**

  Hard copies of information e.g. consent forms, transcripts, etc will be held in a locked box at the home of the researcher. To be shredded when no longer required.

- **Digital Data:**

  Digital data which will include audio and visual recordings in the form of MP3 and MP4 and responses from questionnaires completed via Forms will be stored on a password protected primary device owned by the researcher. Further copies of the digital information will be held on OneDrive (cloud storage) and a detachable hard drive which will be stored in the locked file box previously mentioned. Both the hard drive and OneDrive are password protected. All digital data will be deleted when no longer required or when a participant as for them to be deleted which ever is the sooner.

  TEAM meetings of interviews either offline or online will be recorded in compliance with the Safeguarding Policy and Technology Policy of the setting, Keeping Children Safe in Education (2021) and BERA (paragraph 11, 2019). Both children and adults within the setting are used to this procedure as it is used daily. This recording will be downloaded by the researcher and stored as already discussed as above. The meeting will remain on the STREAM until it is automatically deleted after 28 days or sooner if a participant requests to do so.

- **Anonymising Data**

  Compliance under the General Data Protection Regulation (2018) and Data Protection Act (2018) as well as the Information Commissioners Office (ICO, 2012), require personal data to be anonymised. Personal pronouns will become them/they/their as suggested by BERA (2019) for both adult and child participants regardless of gender. No information about name, age or gender will be collected.
# Appendix I: Contingency Planning

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Contingency Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. School Closure</td>
<td>• In the event of setting closure use TEAMS meeting to remotely conduct the interview obtain permission from setting Gatekeeper and DSL</td>
</tr>
<tr>
<td></td>
<td>• Follow contingency for COVID Restrictions (see Challenge 12)</td>
</tr>
<tr>
<td></td>
<td>• Each participant has own device and is familiar with using TEAMS.</td>
</tr>
<tr>
<td></td>
<td>• Follow setting, company guidance and safeguarding policy about recording meetings and save, safely and securely in order to comply with the General Data Protection Regulation (2018) and Data Protection Act (2018) (See Challenge 4)</td>
</tr>
<tr>
<td>2. Participants Leave School</td>
<td>• As researcher is part of the setting discussion will take place with Head Teacher and Registrar during the selection process to find out if any participants are potentially leaving the setting. Those participants who will be leaving prior to the ending of the academic year will not be selected to be part of the research process.</td>
</tr>
<tr>
<td></td>
<td>• Participants who leave unexpectedly will have their information and responses removed from the research and destroyed/deleted immediately</td>
</tr>
<tr>
<td>3. Difficulty with selected research approach/ Interview questions not producing answers required</td>
<td>• Complete a pilot study to assess whether there are problems with selected research approach and/or instruments e.g. interview questions, language used, etc.</td>
</tr>
<tr>
<td></td>
<td>• Discuss issues with supervisor/peers to find a solution</td>
</tr>
<tr>
<td>4. Disclosure made by participant (under 18)</td>
<td>• Speak immediately to DSL and follow protocol as directed by DSL</td>
</tr>
<tr>
<td></td>
<td>• Follow the Setting Safe-Guarding policy BERA (2018)</td>
</tr>
<tr>
<td></td>
<td>• Save interview recording as per safeguarding protocol, if the interview has been recorded</td>
</tr>
<tr>
<td>Challenges</td>
<td>Solutions</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 5. Difficulty timetabling interviews/unexpected events | - The school central diary will be consulted to identify day trips, residential visits, special events, SATs and Assessment weeks  
- Participants and carers will be asked if there are any proposed appointments during the school week  
- Researcher will look at own setting and personal diary to avoid timetabling conflicts |
| 6. Difficulty obtaining parental consent/children do not want to participate | - Provide more information via a leaflet or pamphlet which explains in more simple terms the aims and purpose of the investigation  
- Produce a video which explains the purpose and aims of the investigation and how this will enable the setting to improve practice in the future. The video would be sent out to proposed participants and their families. |
| 7. Participant fatigue                          | - Conduct interviews in short bursts e.g. 30-60-minute slots  
- Allow participants to take ownership of interview by asking them to show their use of Assistive Technology  
- Make the activity fun |
| 8. Participants not being allowed by teachers to leave lessons to participate in research | - Do a short presentation about the proposed research project for colleagues so that they understand the aims and purpose of the research.  
- Negotiate times which would not affect core curriculum learning  
- Investigate if participants and parents would be happy for interviews to be conducted after/before school  
- Fit interviews around the SATs timetable |
| 9. Finding room to conduct the research          | - The setting has very little space however, there are 3 rooms which could possibly be used for the interviews. Investigate the timetable availability of these rooms.  
- (See contingency 10) investigate if participants and parents would be happy for interviews to be conducted after school  
- Schock and Lee (2016) suggest using neutral meeting place. However, consideration must be given to my insider position of teacher within the setting and researcher on Safeguarding grounds. It would therefore be preferable if room could |
| 10. COVID Restrictions e.g. participant or researcher self-isolating, unable to cross bubble | The setting has a COVID 19 Risk Assessment in place and researcher will comply with the Risk Assessment if crossing bubbles i.e. wearing a mask, ventilation of room, social distancing, etc.

- If participant or researcher self-isolating, then follow contingency for School Closure and Safe Guarding (see Challenge 1 and 4) remote interview using TEAMs. Each participant has own device and is familiar with using TEAMs. |
Appendix J: Thematic Analysis Diagrams (Figure 2-8)

Fig. 2 Example of questionnaire data table ready for familiarisation and coding to begin

Fig 3 Mind map of initial deductive codes
Fig 4 mind map which includes descriptive, In Vivo and process codes added to initial codes
Fig. 5 annotated mind map identifying linked codes
Fig 6. Mind map of stage 1 and 2 coding of children’s interview data

Fig. 7 Annotated mind map finding links for children’s interview data

Appendix K Children’s thoughts about different software applications used as AT

<table>
<thead>
<tr>
<th>Application</th>
<th>Child thoughts about applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word</td>
<td>Yeah, I like the English is pretty easy. 'cause you all we have to do. Is type and. Now you just have to write stuff down. C1</td>
</tr>
</tbody>
</table>
| Immersive Reader  | Immersive reader. The best thing, probably on immersive reader is. It will show you a photo of. The thing. Of the word. C1
|                   | Like maybe like if we’re searching things I use like the reader. C2                                                                                                   |
| OneNote           | On one note, we. There’s sometimes like documents where we need to write stuff down on the device. C4
|                   | OneNote. On the content library there is a lot of them... In the content library, we just look at it and then copy it. C4
|                   | I can see the letters better and then if I was copying it off my own sheet. C1                                                                                      |
Dictation

And it’s like a microphone so you can say what you want, but uhm and you can just say what you want and it will type it for you. 
I like using the dictation tool, because you can just speak OK.

Microsoft Flip

I’m instead of writing a diary entry. I did a video on my channel. On my channel, I use flipgrid

Century Tech

Century Tech. Now you’ve got a lot of stuff on there, so century tech that’s got little Nuggets.

Nessy

It it helped me with my dyslexia. So, like, uh? Sometimes it would like help, so it sometimes it would like help me with my typing and then sometimes it would like help me with my spelling and stuff like that.

DanceMat

…it would like help me with my typing.

Minecraft Education

In Minecraft, I’ve made this really awesome world and it’s cool. The world of words.

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Appendix L Critical Reflection Grid

<table>
<thead>
<tr>
<th>Category</th>
<th>Feedback received, targets achieved and areas of development worked on</th>
<th>How did this shape my dissertation?</th>
</tr>
</thead>
</table>
| Knowledge and Understanding: targets, reflections, feedback relating to knowledge of current debate and issues in specific area of focus; drawing out concepts and themes; choosing a focus area for your dissertation; identifying and overcoming ethical issues | Feedback from TMA 01 “I wonder if you could have specifically considered any theory that underpin your work.”
Feedback from TMA 02 “Whilst you make useful arguments about the importance of this topic, there is real scope to refer to theory and previous literature. Whilst I know this wasn’t a literature review, some reference to theory would have been helpful and how these underpin the ideas and then feed into the rest of the proposal.” | Throughout the dissertation process I have struggled to identify and incorporate theory into my writing. One of the reasons being that the majority of the literature that I read did not overtly discuss theory with regard to the topic chosen for the dissertation. Following the feedback from my tutor for both TMA01 and TMA02 I talked to a student teacher who I was mentoring and discussed my problems identifying theories relating to my research. My student provided me with a reading list from her B.Ed course relating to educational theory and SEND which provided a platform for me to search for further theoretical links to my dissertation. My tutor also suggested that I make inferences about theoretical standpoints by analysing the
| Critical analysis and evaluation: | Feedback Draft Chapter 3 It would be helpful to clarify whether this chapter is integrating the presentation and analysis. At the moment, it seems to mostly present the data and themes. One approach you could take, would be to keep this as data presentation in this way, and then use the next chapter to analyse to refer back to literature and compare to what you referred to in your literature review, such as theory and previous research. Alternatively, you could combine these and draw in evaluation and links back to this as you go along here. | After I had handed in this draft chapter and having re-read what I had written I wrote in my notes that I should use and apply the literature that I had reviewed to underpin the data I was attempting to present and analyse. The feedback was devastating. However, after discussions with my tutor I understood better the structure required for this chapter. I also looked at the presentation of other interpretivist and thematically analysed research and watched a presentation by Dr Kriukow. I tried to define my theme, present the data and then analyse it by relating back to previous research and theory. |
| Links to professional practice: targets, reflections or feedback relating to: designing and/or applying research methods; developing ideas from previous research and frameworks; reflecting and making adoptions during the research and writing process; addressing problems in research design; identifying implications for practice and professional debate; challenging your own assumptions; managing workload and personal motivation | Workload and motivation: In my PDP audit I highlighted 1.3 Finding a work-life balance whilst I am studying this also linked to my Performance Management Target at school. This was particularly challenging this year because we returned to what would be considered a “normal” routine in school. However, I did find that big deadlines with the OU which always seemed to clash with big deadlines at work was particularly challenging. I did attempt to make sure that I worked in small chunks throughout the week and utilised school holidays to catch up. I made sure to speak to my tutor to keep her informed of my workload from work and to enable me to complete assignments with a little more flexibility. This was particularly helpful when writing my draft chapters and took away some pressure and anxiety I was feeling towards the end of term. | Ethical dilemma: considering how to ethically justify the selection of a sub group of the Key Stage 2 (KS2) cohort. I felt that this was quite difficult for me as I know all of the children who could potentially be involved with my study. I referred back to the Ethical Researcher course undertaking prior to starting E822. I had two dilemmas how to select a group of children ethically and to make sure that I was not causing them any undue emotional harm by including them into the study. I read what other researchers had done and used the Ethical Grid from Stucthbury and Fox 2009. |
| Structure, communication and presentation: Targets, reflections or feedback relating to: using academic style and referencing; presenting, managing and sharing information in different modes; communicating concepts, findings and ideas for different audiences. | Referencing: although referencing was not directly mentioned in feedback for E822 it was very problematic during E808 and has impacted my writing throughout my masters studies. I felt that it was very important to constantly refer back to the “Cite IT Right information on the OU website and library resources. I made a point of checking how to cite multiple authors. My tutor also pointed out that I omitted the full stop following the use of et al. | Thematic analysis: In PDP audit I highlighted 3.3 Interpret, assess and deploy research methodologies and their evidence this was because I am not a researcher a wide variety of applications to help me organise my thematic analysis. I also read and followed Braun and Clarke (2006) guidelines for thematic analysis. I took a
<table>
<thead>
<tr>
<th>skilled researcher and I needed to analyse and interpret my raw data from both open ended questionnaires and interviews.</th>
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<tr>
<td>short course in thematic analysis and decided to use the DELVE application to code and organise my raw data.</td>
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