This arts-and-design based research project explores the lives experiences of children identified as 2e or with multiple exceptionalities using a creative probe kit.

Collaborative Research Project

2e & Me: The 2e/DME Experience

Francesca DARE

Table of Contents

Project Notes

Note to the reader: For optimal viewing of the full project, please visit the project web page at:

https://www.francescadare.com/research/crp/

Brief: For this collaborative research project, we were asked to identify an area of research we would like to pursue using collaborative research methods.

Terms: Twice or Multiple Exceptionality (often called 2e or DME) occurs when an individual has concurrent high ability and learning difficulties (Foley-Nicpon et al. 2013).

Opportunity: 2e/DME neurodiversity is often hidden, misdiagnosed, overlooked, or even unheard-of (Foley-Nicpon et al., 2013). As a result, there is a paucity of research and little understanding of what it means to be 2e. I was identified as 2e as a child and was the only one in my peer group with this identification. For this collaborative project, I wanted to explore whether the sense of community had changed. As a 2e/DME designer and researcher, how can I better understand the 2e/DME experience from more than my own point of view?

Objective: The aim for this collaborative project was to increase understanding about 2e/DME neurodiversity in children through collaborative research methods.

Stakeholders: Educators, Researchers, 2e/DME Children and Parents

Project Report

2e & Me: The 2e/DME Experience

Acknowledgements

I would like to thank Lyn Kendall, the participants, and their parents. Without them this project would not have proceeded.

Preface

I was identified with twice-exceptionality as a child and was the only one in my school. It felt strange to be in two worlds at once, as I was put in the gifted education groups as well as support sessions. I opted to stay in my local public school and had an individual education plan put in place as the gifted education programme available in another school did not have experience with 2e/DME children. Also, I had a great group of peers and staying in my own school provided stability. However, being 2e in school was not a straightforward experience, and it is my personal experiences that have inspired this research project.

Keywords

Emancipatory Research, Participatory Design, Twice-exceptional, Cultural Probes,

Introduction

We all have strengths and weaknesses - but the experiences and exceptionality of twice-exceptional (2e) people, those with dual/multiple exceptionality (DME), are distinctive and unique to this type of neurodiversity.

Children with multiple-exceptional neurodiversity exhibit high abilities combined with one or more special educational needs (The Good Schools Guide [no date]). Previously called handicapped-gifted (Yewchuk and Bibby 1989) or gifted learning disabled (Brody and Mills 1997), more recent terms include dual or multiple exceptional (Potential Plus UK 2020) and twice-exceptional (Ronksley-Pavia 2015). 2e/DME children have a double or multiple-neurodiversity identity. In some ways, these children can identify with their gifted classmates, but they can also identify with those who require adjustments for special education needs. They experience a unique diversity that is multifaceted, paradoxical, and often challenging to recognise.

Recent research suggests that approximately 60,000 pupils in England are currently identified as 2e/DME– “a likely underestimate as many are home

educated or not identified" (Hawker 2021). Government statistics indicate 8.9 million pupils attend school in England (gov.uk 2021), which means the number of pupils identified with 2e/DME in England is be extremely small, similar to other countries. This small number is likely because 2e/DME is a unique diversity and can be tough to recognise. Students with 2e/DME are often hidden, misdiagnosed, overlooked, or unheard-of (Foley-Nicpon et al. 2013). They are a minority within a minority. In a survey of school psychologists in the US, a majority (60%) had little or no familiarity with twice-exceptionality (Robertson et al. 2011). There also appears to be a lack of UK-based research into understanding and awareness of this unique identity, its strengths, and needs. As a 2e/DME designer and researcher, I wonder how I can better understand the 2e/DME experience from more than my point of view and improve research and awareness.

Aims

As well as satisfying my own curiosity, the ambitions of this research project support the current aims of the Scottish Network for Able Pupils (SNAP).

The current aims on SNAP's website are:

- *"To bring together relevant developments and ideas from a variety of disciplines and initiatives and make them accessible to schools and teachers."* (University of Glasgow [no date])
- *"To ensure a strong national awareness of the issues as they arise and support national initiatives that pertain to the education of more able pupils."* (University of Glasgow [no date])
- *"To support and model for schools' appropriate challenges for more able pupils within an inclusive framework."* (University of Glasgow, n.d.)

While SNAP is concerned with all gifted/highly-able children, this project's scope only involves those uniquely identified as 2e/DME.

Specifically, this project aims were to:

- Act as a friend to the 2e/DME community
- Encourage creativity, positive thought, and innovation among project participants.
- Better understand the lived experience of 2e/DME children from their perspective and without judgement, prejudice, or stigma.
- Increase awareness of 2e/DME.

Approach

This qualitative research project uses an arts & design-based (Burge et al. 2016) emancipatory research paradigm (Noel 2016) to explore the lived experiences of 2e/DME children. The emancipatory research theoretical perspective in my Design Research and Practice originates in my own experiences of being a 2e/DME creative. The exploration of lived experiences lends itself to a phenomenological approach.

Unlike a positivist research paradigm, which believes in one logical reality that can be scientifically proven, calculated, or observed (Business Research Methodology [no date]), emancipatory research relies on the belief in more than one reality. It is a form of participatory action research that can give voice to both the individual and shared experiences, which is an integral part of this project's ethos.

"It [emancipatory research] is seen as a process of producing knowledge that can be of benefit to disadvantaged people, and its key aim is to empower its research subjects."

(Noel 2016, p.457)

My role as a researcher on this project is to empower participants to share their knowledge as experts in their experiences. I act as a research guide, in collaboration with the children as researchers.

Context

The importance of 2e/DME research

One of the barriers to raising awareness about 2e/DME is a general misconception that gifted children do not have learning difficulties. In the early 1900s, research into intelligence focussed on the idea that intelligence is a global construct. Researchers tried to develop intelligence tests to quantitatively measure intelligence in a single score, known as an IQ score, with 100 being average.

In the 1980s, theories of multiple intelligences began to be developed. Howard Gardner's (1986) theory of multiple intelligences added new ways of thinking about intelligence by changing the definition from a single score to a range of

abilities. And Sternberg's 1988 (cited in Blesch 2012, p.2) triarchic model of intelligence described three attributes of intelligence: analytical, creative, and practical. These theories challenged the idea that someone's intelligence can be summarized in a single score.

Yet the lack of awareness and understanding about multiple exceptionalities continues (Lucinda 2016). Children who have a multiple exceptionality are hard to spot. Sometimes their 'giftedness' hides their learning difficulties and vice versa, making identification difficult. (Lucinda 2016)

The uniqueness of 2e/DME children

The combination of disability and giftedness (high ability) in childhood

For some people, the word 'disability' evokes the stereotype of lacking general intelligence (cited in Ronksley-Pavia 2015). This stereotype is inaccurate (Baldwin et al. 2019). Gifted children with vision loss, missing limbs, or other 'visible' disabilities are not any less intelligent because of these factors. Similarly, people with learning difficulties can have high intelligence.

The Canadian researcher Françoys Gagné developed a widely-used *Differentiated Model of Giftedness and Talent* (Gagné 2008). This model focusses on the developmental nature of high ability, rather than focussing on achievement (Ronksley-Pavia 2015, p.322). Gagné's model is important as it includes the understanding that children have high cognitive abilities, but they might not be high achievers. This disparity can be particularly true if a 2e/DME child does not receive sufficient support for their learning difficulties, which affects their ability to demonstrate their cognitive potential.

Stigma, Identity, Stereotypes & Bullying

2e/DME children are identified with giftedness and one or more special needs. They are often stereotyped and subject to stigmatization associated with both 'disability' and giftedness (Ronksley-Pavia et al. 2019b). Ronksley's study on 2e/DME children's lived experiences in Australia reveals that many of these stigmas and misconceptions are prevalent in Western cultures. Both gifted and special needs children have strong feelings of being different from their peers. Despite their identities often being more hidden than other obvious forms of 'other.' Due to their strong feelings of isolation and absence of "like-minded peers and traits" (Ronksley-Pavia et al. 2019b, p.8), gifted children are at higher risk of bullying. Children with a disability label often feel feelings of embarrassment and exclusion.

> *"These children are often teased by their classmates, misunderstood by their teachers, disqualified from gifted programs due to their deficiencies, and unserved by special education because of their strengths"*
> (Ronksley-Pavia 2015, p.326)

Ronksley-Pavia et al. (2019b) describe the following five main themes in their initial analysis of the children's interviews: 1. Personal Interests, 2. Negative Experiences, 3. Support Networks, 4. Stress, coping and resilience and 5. Sense of Self. (See Appendix A: Table from "Privileging the Voices of Twice-Exceptional Children"). Their analysis further identified strong similarities between children's stigma narratives. As someone identified as 2e/DME as a child, I recognised my own feelings and childhood experiences within several of the statements these children said in Ronksley-Pavia et al.'s (2019) interviews, such as:

"I got 98%, so it was an A [grade]. People didn't believe that I got an A because they think, "He's got dyslexia how can he get an A?" Everyone's like, "Well how could he get such a good mark?" . . . . kids thought I cheated." - Buster (13 years old)

"I was getting dreams about me failing everything . . . One dream, I was just sitting there, and it was the start of the year, and I had just said one word to the teacher, and she said I had failed straight away. . . I normally fail English and I almost failed maths one time, that got me worried, because I don't like failing. [I feel] sad and annoyed [when I fail]" - Boomstick (aged 10 years)

The children also struggled with their identity due to stigma, stereotypes, and bullying. One child in the study commented that:

"I don't feel like I'm like this [Autism Spectrum Disorder (ASD)] . . . I don't see why I need a label, people have just looked down on me for being labeled as that . . . they think you're dumber, you don't have the same ability to do things. I am perfectly able to do the same things as others; sometimes I'm better than what is considered normal. I didn't want that related to me anymore . . . It was just essentially a label that people could make preconceived judgments about me . . . it was completely useless" - Ashley (16 years)

Identifying 2e/DME children can be challenging for many reasons. Some 2e/DME children try to hide their differences from peers to avoid stigmatisation, bullying, and feelings of being different. Experts agree that identification can lead to

several positives, such as greater awareness and improved support for the child, such as appropriate challenges to keep them engaged, as well as greater understanding and compassion from educators (McPherson, 2015; Murawski & Scott, 2017). However, understanding and compassion can be difficult to attain from children's peer groups who may not fully comprehend the complexities of 2e/DME identities. (Ronksley-Pavia et al. 2019a)

Non-cognitive characteristics

2e/DME children demonstrate contrasts between high ability and low academic performance, but they also exhibit these contrasts in their non-cognitive characteristics (Beckmann and Minnaert 2018). Beckman's (2018) review of existing literature showed that children with 2e/DME experience elevated levels of frustration. Other potential non-cognitive characteristics include increased perseverance, heightened self-awareness, low confidence, social withdrawal, and negative attitudes toward school (Beckmann and Minnaert 2018, p.16).

2e/DME children often exhibit elevated levels of negative emotions, attitudes, self-perception, and struggle with interpersonal relationships. However, they also show higher than average levels of motivation, resilience, and coping skills, which make up a part of their positive personality traits (Beckmann and Minnaert 2018). In addition to these shared dualities, many 2e/DME children exhibit a remarkably elevated level of "inter/intra-individual variability in their non-cognitive characteristics" (Beckmann & Minnaert, 2018, p.17). Likely, support from parents and teachers and an understanding of their dual identity contribute to this uniqueness within the 2e/DME community.

The importance of children's involvement in research

While these children vary greatly as individuals, they also have some shared experiences. This research project is interested in the children's perspective of both areas (individual and collective). Per Articles 12 and 13 of the United Nations Convention on the Rights of the Child (UNCRC, 1989), children have the right to be involved in all activities that affect their lives (cited in Kellett et al. 2004). There are several positives to including children collaboratively in research, but there are also some negatives and limitations. Research with children is often undertaken in a school setting with a captive audience, resulting in a power issue to be considered (Kellett et al. 2004). The practical aspects of skill, competence and knowledge barriers must also be considered. Some researchers have suggested that "children can't tell truth from fiction; they say what the interviewer wants them to say" (Kellett et al. 2004, p.331). Thankfully, these perspectives have been

mostly challenged because it is recognized that "adults are just as likely to blur truth and fiction as children because truth is itself a personal construct." (Kellett et al. 2004, p.331).

For this research project, I consider the realities of these children's lives to be truth - as it is their reality regardless of the perceptions of outside adult perspectives (which is why a positivist approach would not have been appropriate in this project).

> *"There is conflict between the life and experiences of a twice-exceptional child who is first and foremost a child—one who is an active and experienced voice of intellectual strength and maturity—and the disability label he or she receives."*
> (Ronksley-Pavia 2015, p.321).

Children can become researchers with appropriate direction, patience, and understanding, even leading their own studies (Kellett et al. 2004). In the context of this project, the children are working as collaborative researchers by creating and collecting data about their lives, thoughts, and feelings. They can express their experiences independently, in the comfort of their own space, without excessively directional or assumptive questioning.

Existing research and design work

As mentioned above, this project follows a Participatory Action Research (PAR) approach. This approach has been used with 2e/DME children to collaboratively design and develop strategies for teachers to support the special needs of 2e/DME students. (Haines, 2017). Similarly, Noah from Coloured Fish Products creates t-shirts designs to raise awareness of his dyslexia (Noah, 2014).

An example of a project designed to raise awareness and change stereotypes, Made By Dyslexia opened 'the world's first dyslexic sperm bank' to raise awareness about dyslexia and some famous dyslexics who are considered high intelligence or high achievers such as Albert Einstein. They also collected information about public perceptions and understanding about neurodiversity. Their film about this intervention won the 2018 D&AD Award Pencil (Made by Dyslexia & Y&R London, 2018).

Method

Ethical considerations

Working with vulnerable groups. As this project involves working with children, I become a member of Disclosure Scotland's Protecting Vulnerable Groups to complete this project. This scheme helps ensure that people whose behaviour makes them unsuitable to work with children are prevented from doing 'regulated work' (mygov.scot 2021).

PVG membership number: 2111 0225 5295 4493

Disclosure Number: 3000 0000 0137 6163

Obtaining parental consent/ children's assent. The parents/guardians of the participants were given a consent form to review and give permission for their child to participate in this research project. The parents/guardians were reminded that participation is not mandatory, and they or their child can stop at any time (Appendix E).

Maintaining confidentiality. In this report, all participants are anonymized by using pseudonyms and editing identifying information out of photographs.

Participants

This project initially had six people reach out expressing interest to the collaborative partner, Lyn. Three of these participants subsequently contacted me. The three participants included two who were formally identified as 2e/DME and one who self-identified. Out of the three agreed participants, I received two partially completed responses.

A phenomenological approach: Using an arts/design-based cultural probe kit

This phenomenological qualitative research project used an arts/design-based cultural probe kit aimed at engaging children as participants to share their lived experiences.

This style of collaborative research relies on objects rather than talking or watching. This playful approach can help engage communities to express their perspective before we push for change and create opportunities to increase awareness. Engaging the community and the children to be self-reflective through creativity and play enables them to increase their awareness of their

identity. The cultural probe kit can be beneficial to gather qualitative data based on participants' self-documentation, allowing them time and space to complete the task on their own. This style of research is especially useful when working with neurodiverse children who have individual learning, working and expression styles. An arts/design-based approach can be used in both the data collection and data analysis of a research project (Burge et al. 2016)

This project used a probe kit to engage children in an emancipatory paradigm that was explored through the expression of a t-shirt design. This approach encouraged the idea of surprise and "breaking through habitual ways of seeing, thinking and acting" (Burge et al., 2016, p. 731). As the research guide, I encouraged participants to think about the research questions in the hope of exploring "unexpected juxtapositions … leading to insights and deep reflection." (Burge et al., 2016, p. 731).

This method – using an arts/design-based activity guided through a probe kit - supports an emancipatory approach as it provided the "capacity for immediacy and accessibility and for giving voice to subjugated perspectives." (Burge et al., 2016, p. 731). Additionally, integrating art into this research project was based on recommendations from Eiserman (2017), who explored arts education and understanding with gifted children in a school setting to address their unique needs. The method supports Dabrowski's Theory of Positive Overexcitabilities (cited in Eiserman et al. 2017), where arts activities allow gifted children to channel their overexcitabilities into "positive avenues of enquiry" (Eiserman et al. 2017, p.208).

Unlike traditional participatory action research, where the entire design of a study is co-created between participants and researchers (Creswell 2018), the cultural probe kit is designed by the primary researcher and includes objects or materials to assist the participant in collecting data about their lives. In this project, the participatory action occurred in the design and making of the t-shirts and the self-creation of data through this arts/design-based method (Sanders and Stappers 2014; Burge et al. 2016; Eiserman et al. 2017; Kassan et al. 2020).

Process

Connecting with the community

At the start of this research project, I contacted two charity partners - Potential Plus UK and the University of Glasgow's Scottish Network for Able Pupils. Initially, I received a response from Potential Plus UK that my email had been passed onto

the Chief Executive. Unfortunately, after unanswered follow-up emails, I could not collaborate with Potential Plus UK for this project.

I also reached out to the Scottish Network for Able Pupils (SNAP) and received positive feedback and interest. Unfortunately, some of my emails landed in their spam folder. Attempts to connect with the SANP contact after their annual leave were unsuccessful.

After some unsuccessful attempts at finding a charity partner, I also attempted to contact the National Association of Gifted Children ([no date]) and the US charity The Davidson Institute for Talent Development (2022) without any success.

Finally, I reached out to British Mensa (2022) using their online contact form and received an encouraging reply. I included the idea of a t-shirt design probe kit in my message to them. They said that the project sounded "very interesting" and connect me with Lyn Kendall, a "psychologist who regularly assesses children and is a former G&T/SEND teacher." Mensa's reply was an exciting development in my outreach process. The completed form and full reply can be read in Appendix B: Correspondence with Mensa.

I contacted Lyn, we set up a phone call, and she sent me a copy of her book. Lyn helped this project by giving advice and asked for a poster to share with her parents' group to find participants. She approved the poster (as shown in Appendix C: Poster for Facebook Group) and shared it with her group, where six people responded. Those who reached out to Lyn were instructed to contact me directly. Out of this first group of six people, two parents reached out to me directly.

I finalized the probe kit and sent photographs and digital files to Lyn for her feedback and review. She gave positive feedback and asked if the additional details could be shared with her parents' group as they had questions. I agreed with this suggestion as I thought it may encourage more members to get in touch for a kit. (Unfortunately, no further potential participants came forward.)

Developing the probe kit and research questions

I had originally posed the question, "what is it like to be 2e?". Working closely with Lyn, she suggested there is a risk in asking children such a blunt question, as gifted children often answer questions of that nature with *"I don't know, I am just me."* (Interestingly, she discusses this phenomenon in her book: "*A Brilliant IQ: Gift or Challenge?*"(Kendall and Allcock 2020)). Lyn suggested a better approach would be to ask more probative and thought-provoking questions, allowing for varied and individualized expression of responses.

While developing the probe kit and design questions, I also sought to create a task that would feel safe to 2e/DME children. Baum et al. (2014) recommend three overarching guidelines for creating programs where 2e/DME students feel safe, including: (1) collecting data in a purposeful way "*to gain knowledge of students' strengths, interests, and talents,"* (2) addressing deficits in context *"so students can apply and transfer skills in authentic ways*" and (3) understanding children's uniqueness rather than "*insistence on measuring them by grade-level expectations."* (Baum et al. 2014, p.323). Baum's study promotes the use of a "Multiperspectives Process Model" (2014, p.311) (which considers the whole child, both their gifted ability and other exceptionalities simultaneously) with a positive perspective and direct attention to their personal interests and talents. This strategy is a holistic way of assisting 2e/DME students through their learning experiences (Ronksley-Pavia 2015, p.324).

Combining insights from existing literature with the advice from Lyn's professional experience (and her book) with 2e/DME students, I developed the overall kit concept and research questions. The central concept was to provoke children to reflect on their strengths, their community, and their coping mechanisms. I wantedto ensure the children felt empowered, celebrated, and supported, rather than simply asked what they need help with (which is can easily be the question they are approached with, and they may not be equipped to answer). I also considered how to translate these complex concepts into an activity suitable for a broad age group of 6 to 16 year-olds.

Inspired by Coloured Fish Product's awareness t-shirts, as well as Dyslexia Scotland's "Dyslexia is my Superpower" campaign, I asked the children to decorate a t-shirt with their "superpower" on the front, their "superteam" on the back, and their "defence system" on the armband.

The final probe kit included (see also; Appendix D: Kit Photographs):

- Instruction Sheet
- Consent Form
- Activity Guide
- Designer Statement Cards
- White T-Shirt
- White Armband
- Fabric Markers
- Neon Fabric Paint
- Glow Pen
- Metallic Markers

- Transfer Paper
- Crystal Stickers (2E)

The crystal stickers and transfer paper allowed the children to use some collage, so they did not need to feel 'artistic' to complete the project. Additionally, the selection of arts and crafts materials were intended to give children choices in how they expressed themselves. For some time, I considered the addition of a tie-dye kit to offer creative alternatives away from the basic white of the t-shirt. However, the size constraints of the bottles I decided not to include this option.

To dig deeper into the participants' design processes, I included Designer Statement Cards in the probe kit. These cards gave the children the opportunity to explain their designs as an artist might using words, sentences, or even imagery (as thought bubbles were provided.) Minimal instructions were given where possible to allow the children the space to explain their design ideas in the way they felt best suited to.

The children were reminded there were no right or wrong answers and they were not required to use all the kits contents. Specifically, they were asked to "Use the supplies you like in this kit to design your personalized t-shirt & armband following the Activity Guide." (See Appendix E: Kit Instructions). The activity guide provided design direction and questions for the children to reflect on, as shown in Appendix F: Activity Guide and Designer Statement Cards. It was important to ensure the children knew they had a choice in the creative process, as "choice making can increase student motivation and independence." (Murawski and Scott 2017, p.23) particularly when working with exceptional learners.

They were encouraged to return their kits by being told they would be displayed on the '2e Hall of Fame'.

Developing the kit visuals for children's enjoyment

The children needed to be engaged with the kit and that there was no perceived stigma surrounding the activity or participating in the activity.

I explored the practical options of sending the kit via Royal Mail as either a Small Parcel or a Large Letter. The Large Letter option was more economical and allowed for the kits to fit through a letterbox, but they are significantly thinner and smaller than a 'Small Parcel,' so this was a concern. I purchased a standard white box to send the kit in as a practical option and created two different box designs using the laser cutter. The laser-cut design of a 'large letter' appeared the most likely to be exciting to children. It was also compact and kept the kit contents secure.

I worked through graphics options for the exterior of the box as I wanted children to be excited to receive the parcels. The graphic design elements of triangles and vibrant colours used in the poster and kit cards were carried onto the box to resemble a traditional style letter envelope. The final design included the 2e & Me project title over the front of the box in various fonts to represent the uniqueness of the children in the 2e/DME community. (Images 1 & 2)

More photographs and information on the design process of the kit is available here: https://www.francescadare.com/packaging-kit-design/

Online supplemental information

I created a research introduction page and linked it to the initial poster, allowing parents to learn more about the project before coming forward. I also create a participant page to give parents access to digital copies of everything that was in the kit and a link to the 2e Hall of Fame. Copies of these pages can be seen at: https://www.francescadare.com/research/crp/#additionalpages

Further details and information on this project and the process can be found at: https://www.francescadare.com/research/crp/#work

Results and Interpretation

Of the three kits sent out to participants, two returned kits were partially completed, and one kit was not returned. Participant 1 submission can be seen in *Appendix G: Participant 1 Response Photographs* and Participant 2 in *Appendix I: Participant 2 Response Photographs*.

Participant 1: Sparrow

Sparrow (not their real name) was a 10-year-old formally identified as gifted with ASD (Autism Spectrum Disorder) and ADHD (Attention Deficit Hyperactive Disorder). They were the first to complete a portion of the kit and send in. Their

parent emailed in to say that "He [Sparrow] made a mistake at the back and he got really upset and refused to carry on" (Appendix H). It can be common for 2e/DME children to struggle with perfectionism, performance anxiety (Stornelli et al. 2009; Guignard et al. 2012; Baum et al. 2014; Baldwin et al. 2019) and "overexcitability" (Eiserman et al. 2017, p.200). It is understood that "*individuals with overexcitability perceive the world not only in different, but also in more intense and multifaceted ways than others; they are much more prone than others to experience surprise and puzzlement at events in their daily lives.*" (Eiserman et al. 2017, p.200).

Even when 2e/DME children are interested in the task, or capable of completing it, they can sometimes become too overwhelmed to continue. Sparrow could also be suffering from "internalizing negative experiences" (Ronksley-Pavia et al. 2019b) resulting in anxiety and the inability to participate in activities they enjoy (Ronksley-Pavia et al. 2019b). Children with 2e/DME also "sometimes appear immature by using anger, crying, and withdrawal to express feelings and to deal with difficulties" (Baldwin et al. 2019, p.220), which could be the case here given Sparrow's age and identification.

Sparrow's parent reported that "Sparrow really enjoyed creating his design, he planned it and loved the art materials." (Appendix H). There is some grey literature that children with autism take comfort in organising their things (Comeau 2016), but there is little supporting academic evidence for this. Planning could be a learned technique that Sparrow enjoys and associates with positive outcomes and could be a way of minimising uncertainty in the task ahead, or to try and minimise 'mistakes'.

Some literature suggests that people with ASD are poor planners (Olde Dubbelink and Geurts 2017), but according to Baldwin et al. 2e/DME children are "often unwilling to take risks with regard to academics or areas of deficit" (Baldwin et al. 2019, p.220), so this could be a demonstration of being risk averse, or one of his "independently developed compensatory skills" (Baldwin et al. 2019, p.220).

As seen in Appendix G, Sparrow completed the front of the 2-shirt, and the corresponding designer statement card (Appendix G, Image 1 & 2).

The Designer Statement Card submitted reads: *"There's a brain, a cricket bat, maths, circles, physics equations, chemistry test tube and 3 flags of the countries Im from".*

As 2e/DME is a neurodiversity, it is interesting to see a brain depicted (with 2E placed on top) in Sparrow's design. It seems fitting to say that his unique brain

and way of being in the world is a superpower, as superpowers are depicted in comics as something that differentiates the character. The large multi-coloured cross-style shape could be drawing on classic superhero costume imagery in popular culture. Just like superman has a large S in the centre of his chest, the brain is in the centre of the chest and the cross-style shape, which is likely an indication of the importance that Sparrow places on this aspect. Sparrow also includes imagery that expresses his own cultural background (which makes him unique) as well as academic interests and possible strengths. The design is well planned and shows good visual symmetry – likely as a result of Sparrow's pre-planning.

A week later, Sparrow completed the armband and corresponding designer statement card (Appendix G, Image 3). It was encouraging to see that Sparrow returned to the activity, but not surprising that he did not re-approach the back of the t-shirt, which is where he had already 'made a mistake'. Gifted children's criteria for success is typically higher than their peers (Stornelli et al. 2009) which could be the case here as Sparrow was formally identified as 2e/DME (Gifted with ASD and ADHD). His participation provided valuable insights into his lived experiences. If this activity was performed in-person as part of a workshop, then a better understanding would have been possible, and Sparrow may have been able to complete the project with peer support. His Designer Statement Card reads: *"The book is an encyclobedia next to this is a computer these things help me to calm down."* (Appendix G, Image 3).

You can see that encyclopaedia is incorrectly spelt but given his age and the difficulty of the word, this might not be connected to his exceptionalities. English and writing did not make it on the front of the shirt, alongside maths and science. Perhaps Sparrow struggles in these areas, and he may use computers as supportive tools. It is interesting to see an encyclopaedia mentioned as they are not as popular as they once were, but it understandable that Sparrow may enjoy the tactile nature of the books (Sfrisi et al., 2017).

Participant 2: Starling

Starling (not their real name) was an 8-year-old and self-identified as gifted with ASD, ADHD, and OCD. Their submission included only the 'My Defence' portion of the kit - the parent had indicated in earlier emails that they had been quite busy. Given Starling's age and exceptionalities, it could have been difficult to keep their attention regardless of the activity. This could be the case given the 'My Defence' portion was the smallest area to design.

Sparrow's 'My Defence' Designer Statement Card reads: *"I drew a book cricket, staying away from people, play with my baby sister, go on ipads, draw stuff and running around."* (Appendix I, Image 3). The images of the armband (Appendix I, Image 1 & 2) are slightly difficult to see but there is evidence of multiple colours and shapes.

Compared to Sparrow's response, Starling's defence items are more varied and include social regulation. It is possible given Sparrow's younger age and lack of formal identification that their coping mechanisms are more experimental. They will not likely be receiving supplemental support in school, and so will be relying on compensating techniques. Often 2e/DME children will experience a shift — described as 'hitting a wall' (Baldwin et al. 2019, p.218) — at around ages 11-12 years old when they move further in education, as they are no longer able to "fake" their abilities using compensating techniques (Baldwin et al. 2019).

Starling indicated that their favourite subject was maths (although what they are best at) and they need the most help with literacy. No assistance was noted on the card. Starling's parent took the photograph and submitted it on Starling's behalf.

Participant 3: Crow

Crow (not their real name) was a 10-year-old formally identified as gifted with a specific learning disability (SLD).

Crow's parent/adult asked for extra time to complete but after follow-ups did not complete the task or offer explanation or additional information.

Conclusion and Recommendations

General & practical limitations

While probe kits have several positives, there are some limitations. Compared to a workshop where the researcher can supervise participants, a probe kit removes the ability to view the creative process. In this project, the limitations of a probe kit were weighed against the benefits of including participants from across the country and allowing neurodiverse children the space and comfort to have an enjoyable experience as participatory researchers.

Probe kits are particularly difficult to ensure the results are returned to the researcher. In this project six people initially expressed interest in participating (or having their child participate). Of the first six respondents, three participants

shared their postal address to have a kit sent out, and two partial responses were returned.

The nature of this qualitative research and the small sample side mean the results can not be generalised across all contexts. The intentions are to provide an in-depth understanding of these 2e/DME's children's lived experiences and perspectives and empower them to participate in self-reflection and expression.

Conducting this research by workshop may have resulted in higher completion rates compared to using probe kits by mail. Probe kits were selected to remove the issue of travel and location and in theory open the pool of potential participants. Unfortunately, it proved difficult to obtain postal addresses and then to receive the kit responses back.

Probe kits also limit the amount of interaction with participants. In this project I was unable to watch the designs being completed and ask probative questions. Additionally, conducting this study as a workshop may also provide insights into peer support and the participants may have been better able to complete the designs with outside support.

Lived experiences of 2e/DME children

This research supports the idea that the lived experiences of 2e/DME children are unique. They show traits of both gifted and their other 'exceptionality' identities. It is evident they enjoy sharing about themselves and have interests both inside and out of school. Beyond all else, like Ronskley says, they are first and foremost children (Ronksley-Pavia 2015), with their own personalities, interests, and experiences. The best way to better understand them, and in turn help, is to continue to ask about their lives and experiences, listen and learn from them.

Further research

Even though the 2e/DME community is small, further research is this area is still needed. It is not a well-recognised identity (Robertson et al., 2011) and children can often be overlooked, with their learning difficulties overshadowing their gifted traits or vice-versa (Foley-Nicpon et al., 2013). As Baldwin et al. (2019, p.218) states, "twice-exceptional students must have a comprehensive, individualized, flexible plan that addresses the whole child." More understanding and awareness of 2e/DME children will help them develop their strengths and overcome their weaknesses.

References

Baldwin, L., Omdal, S.N. and Pereles, D. 2019. Beyond Stereotypes: Understanding, Recognizing, and Working With Twice-Exceptional Learners. *Teaching Exceptional Children* . doi: 10.1177/0040059915569361.

Baum, S.M., Schader, R.M. and Hébert, T.P. 2014. Through a Different Lens: Reflecting on a Strengths-Based, Talent-Focused Approach for Twice-Exceptional Learners. *Gifted Child Quarterly* 58(4). doi: 10.1177/0016986214547632.

Beckmann, E. and Minnaert, A. 2018. Non-cognitive characteristics of gifted students with learning disabilities: An in-depth systematic review. *Frontiers in Psychology* 9(APR). doi: 10.3389/fpsyg.2018.00504.

Blesch, A. 2012. *Sternberg's Triarchic Theory of Intelligence*. [Online]
Available at:
https://www.researchgate.net/publication/342918703_Sternberg's_Triarchic_Theory_of_Intelligence
[Accessed: 11 April 2022].

Bornstein, M.H. and Gardner, H. 1986. Frames of Mind: The Theory of Multiple Intelligences. *Journal of Aesthetic Education* 20(2). doi: 10.2307/3332707.

British Mensa Ltd 2022. *Mensa: Contact Us*. [Online]
Available at: https://www.mensa.org.uk/contact-us
[Accessed: 11 April 2022].

Brody, L.E. and Mills, C.J. 1997. Gifted Children with Learning Disabilities: A Review of the Issues. *Journal of Learning Disabilities* 30(3), pp. 282–296. doi: 10.1177/002221949703000304.

Burge, A., Godinho, M.G., Knottenbelt, M. and Loads, D. 2016. ' … But we are academics!' a reflection on using arts-based research activities with university colleagues. *Teaching in Higher Education* 21(6), pp. 730–737. doi: 10.1080/13562517.2016.1184139.

Business Research Methodology [no date]. *Positivism Research Philosophy*. [Online]
Available at: https://research-methodology.net/research-philosophy/positivism/
[Accessed: 11 April 2022].

Comeau, E.T. 2016. *Autism: 5 Things You Should Know About Children With ASD*.

Creswell, J.W. 2018. *Qualitative inquiry & research design : choosing among five approaches.* Fourth edition / … Poth, C. N. ed. Los Angeles: SAGE.

Davidson Institute 2022. The Davidson Institute for Talent Development: What We Do. [Online]
Available at: https://www.davidsongifted.org/about-us/what-we-do/
[Accessed: 11 April 2022].

Eiserman, J., Lai, H. and Rushton, C. 2017. Drawing out understanding: Arts-based learning and gifted children. *Gifted Education International* 33(3). doi: 10.1177/0261429415576992.

Foley-Nicpon, M., Assouline, S.G. and Colangelo, N. 2013. Twice-Exceptional Learners: Who Needs to Know What? *Gifted Child Quarterly* 57(3), pp. 169–180. doi: 10.1177/0016986213490021.

Gagné, F. 2008. *Building gifts into talents : Brief overview of the DMGT 2.0*.

gov.uk 2021. *Academic Year 2020/21: Schools, pupils and their characteristics*. [Online]
Available at: https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics
[Accessed: 24 May 2022].

Guignard, J.-H., Jacquet, A.-Y. and Lubart, T.I. 2012. Perfectionism and Anxiety: A Paradox in Intellectual Giftedness? *PloS one* 7(7), pp. e41043–e41043. doi: 10.1371/journal.pone.0041043.

Haines, M.E. 2017. *Opening the doors of possibility for gifted/high-ability children with learning difficulties: preliminary assessment strategies for primary school teachers.* Doctor of Education, University of New England.

Hawker, L. 2021. Dual and multiple exceptionalities: what you must know. *tes magazine* 6 December. [Online]
Available at: https://www.tes.com/magazine/teaching-learning/general/dual-and-multiple-exceptionalities-what-you-must-know
[Accessed: 24 May 2022].

Kassan, A. et al. 2020. Becoming new together: making meaning with newcomers through an arts-based ethnographic research design. *Qualitative Research in Psychology* 17(2). doi: 10.1080/14780887.2018.1442769.

Kellett, M., Forrest (aged ten), R., Dent (aged ten), N. and Ward (aged ten), S. 2004. "Just teach us the skills please, we'll do the rest": empowering ten-year-olds as active researchers. *Children & society* 18(5), pp. 329–343. doi: 10.1002/chi.807.

Kendall, L. and Allcock, C. 2020. *A Brilliant IQ: Gift or Challenge?* Brilliant Publications.

Lucinda 2016. *Why Being British Stopped Me Finding Help For My Twice-Exceptional Child.* [Online]
Available at: http://www.laughlovelearn.co.uk/2016/04/18/british-twice-exceptional-child
[Accessed: 11 April 2022].

Made By Dyslexia and Y&R London 2018. *Dyslexic Sperm Bank*. [Online]
Available at: https://www.dandad.org/awards/professional/2018/experiential/26537/dyslexic-sperm-bank/#:~:text=Dyslexic%20Sperm%20Bank%20%7C%20Y%26R%20London,Out%2Dof%2DHome%20%7C%20D%26AD
[Accessed: 11 April 2022].

Mcpherson, M. 2015. *Labelling in Special Education. (Advantages and Disadvantages)*. [Online]
Available at: https://medium.com/@22Committed/labelling-in-special-education-advantages-and-disadvantages-55f7c6201170
[Accessed: 11 April 2022].

Murawski, W.W. and Scott, K.L. 2017. *What Really Works with Exceptional Learners*.

mygov.scot 2021. *The PVG scheme*. [Online]
Available at: https://www.mygov.scot/pvg-scheme#:~:text=The%20Protecting%20Vulnerable%20Groups%20(PVG,work'%20with%20these%20vulnerable%20groups.
[Accessed: 21 May 2022].

National Association for Gifted Children [no date]. *About NAGC*. [Online]
Available at: https://www.nagc.org/about-nagc
[Accessed: 11 April 2022].

Noel, L.-A. 2016. Promoting an emancipatory research paradigm in Design Education and Practice. In: *Future Focused Thinking - DRS International Conference*. [Online]
Available at: https://dl.designresearchsociety.org/cgi/viewcontent.cgi?article=1408&context=drs-conference-papers
[Accessed: 11 April 2022].

Olde Dubbelink, L.M.E. and Geurts, H.M. 2017. Planning Skills in Autism Spectrum Disorder Across the Lifespan: A Meta-analysis and Meta-regression. *Journal of Autism and Developmental Disorders* 47(4), pp. 1148–1165. doi: 10.1007/s10803-016-3013-0.

Potential Plus UK 2020. *Dual or Multiple Exceptionality*. [Online]
Available at: https://www.potentialplusuk.org/index.php/families/dual-or-multiple-exceptionality/
[Accessed: 11 April 2022].

Robertson, S.G., Pfeiffer, S.I. and Taylor, N. 2011. Serving the gifted: A national survey of school psychologists. *Psychology in the Schools* 48(8), pp. 786–799. doi: 10.1002/pits.20590.

Ronksley-Pavia, M. 2015. A model of twice-exceptionality: Explaining and defining the apparent paradoxical combination of disability and giftedness in childhood. *Journal for the Education of the Gifted* 38(3), pp. 318–340. doi: 10.1177/0162353215592499.

Ronksley-Pavia, M., Grootenboer, P. and Pendergast, D. 2019a. Bullying and the Unique Experiences of Twice Exceptional Learners: Student Perspective Narratives. *Gifted Child Today* 42(1). doi: 10.1177/1076217518804856.

Ronksley-Pavia, M., Grootenboer, P. and Pendergast, D. 2019b. Privileging the Voices of Twice-Exceptional Children: An Exploration of Lived Experiences and Stigma Narratives*. *Journal for the Education of the Gifted* 42(1). doi: 10.1177/0162353218816384.

Sanders, E.B.-N. and Stappers, P.J. 2014. Probes, toolkits and prototypes: three approaches to making in codesigning. *CoDesign* 10(1), pp. 5–14. doi: 10.1080/15710882.2014.888183.

Stornelli, D., Flett, G.L. and Hewitt, P.L. 2009. Perfectionism, Achievement, and Affect in Children: A Comparison of Students From Gifted, Arts, and Regular Programs. *Canadian journal of school psychology* 24(4), pp. 267–283. doi: 10.1177/0829573509342392.

The Good Schools Guide [no date]. *Dual or multiple exceptionality (DME)*. [Online]
Available at: https://www.goodschoolsguide.co.uk/special-educational-needs/types-of-sen/dme
[Accessed: 11 April 2022].

University of Glasgow [no date]. *Scottish Network for Able Pupils: About Us*. [Online]

Available at: https://www.gla.ac.uk/research/az/ablepupils/aboutsnap/ [Accessed: 11 April 2022].

Yewchuk, C.R. and Bibby, M.A. 1989. The Handicapped Gifted Child: Problems of Identification and Programming. *Canadian Journal of Education / Revue canadienne de l'éducation* 14(1), pp. 102–108. doi: 10.2307/1495205.

Appendices

Appendix A: Table from “Privileging the Voices of Twice-Exceptional Children”

Table 4 from [Privileging the Voices of Twice-Exceptional Children: An Exploration of Lived Experiences and Stigma Narratives (sagepub.com))]

Table 4. The Five Main Themes From the Initial Analysis Across the Children's Narratives.

Theme
1. Personal interests Having regular time set **aside during their week to actively engage in their own interests was a vital component of the** children's lived experiences. For example, art, music, mountain biking.
2. Negative experiences All eight of the participants reported ongoing negative experiences, mostly at school, which usually involved interpersonal interactions. For example, bullying by peers.
3. Support networks Identified external factors, which participants acknowledged as supports. For example, pets; and social networks.
4. Stress, coping, and resilience The children's prior negative experiences affected their perception of, and their resilience to adverse situations. For example, stress and coping responses.
5. Sense of self Refers to aspects of the children's lived experiences that contributed to self-understanding and self-knowledge. For example, feelings of being different.

Appendix B: Correspondence with Mensa

British Mensa: Your Enquiry Has Been Received

postmaster@mensa.org.uk <postmaster@mensa.org.uk>
on behalf of
no-reply@mensa.org.uk <no-reply@mensa.org.uk>
Thu 12/9/2021 3:33 PM
To: Dare, Francesca <40410289@live.napier.ac.uk>

CAUTION: This email originated from outside Edinburgh Napier University. Do not follow links or open attachments if you doubt the authenticity of the sender or the content.

Mensa High IQ Society Logo

Dear Francesca Dare,

On Thu 9th December, 2021, we received the following message from you:

"Hi My name is Francesca and I'm a masters student at Napier University in Edinburgh. I am emailing to ask about working with your organisation on a project that aims to better understand the experiences of twice exceptional children. I was identified as 2e when I was younger, so this topic is particularly close to my heart. The project will become part of my Masters research. In addition to my graduate education, I have work experience as an analyst for a large corporation. This combination of education and experience means I can competently conduct research that will provide opportunities to raise awareness of 2e children's unique perspectives. To find out more about me, you can see my full CV on LinkedIn here; https://www.linkedin.com/in/darefrancesca/ . And you can see my portfolio on my website here: https://www.francescadare.com/ I am looking for a partner for a collaborative project towards my masters. My key research interest is using design as an inclusive research method. For this project I would love to start with exploring the lived experiences of 2e children. One idea is to send out research kits and ask them to express their views by designing a T-Shirt. This idea would work in place of an in-person workshop, partly due to covid, but also it will allow more flexibility for participants. They can keep the shirts that they make and I'd ask them to send photos of their creative process. We would work together on the best way to organise this. I would appreciate the chance to discuss this opportunity and answer any questions you might have. Could you direct me to someone in your organisation that would be best for me to reach out to? Many thanks, Francesca Dare Student (PT) MA Product Design Making"

Thank you very much for your interest. We will aim to answer your enquiry within three working days.

Your sincerely,

The British Mensa Team.

British Mensa Ltd, Deansgate, 62-70 Tettenhall Road, Wolverhampton, WV1 4TH, United Kingdom
Tel: (0) 1902 772 771
© 1995-2017Mensa Logo British Mensa Limited Registered in England No. 00971663

Mensa query

Ann Clarkson <ann@mensa.org.uk>
Tue 12/14/2021 3:30 PM
To: Dare, Francesca <40410289@live.napier.ac.uk>
Cc: Lyn Kendall <lyn.kendall@yahoo.co.uk>

CAUTION: This email originated from outside Edinburgh Napier University. Do not follow links or open attachments if you doubt the authenticity of the sender or the content.

Hi Francesca
Thank you for your email and apologies for the delay getting back to you.
Your project sounds very interesting, and I'm sure we would be able to find people to help you with your research.
By way of introduction, I have copied in our gifted child consultant Lyn Kendall to this email. As well as a mine of information about very bright children, including those with other exceptionalities, Lyn is a psychologist who regularly assesses children and is a former G&T/SEND teacher.
She also hosts a parents' group for very bright children who may or may not be Mensa members, so her potential "pool" is a little bigger than ours.
I can pass on details of your project to parents of our bright sparks, and I'm sure Lyn will do the same with her group.
Just let me know all the details, including how parents can contact you, and we will find the best way to help.
Best wishes

Ann

Ann Clarkson
Communications Manager

Direct Line +44 (0) 1902 392512
Switchboard +44 (0) 1902 772771

www.mensa.org.uk

| British Mensa Limited | Deansgate | 62-70 Tettenhall Road | Wolverhampton | WV1 4TH |

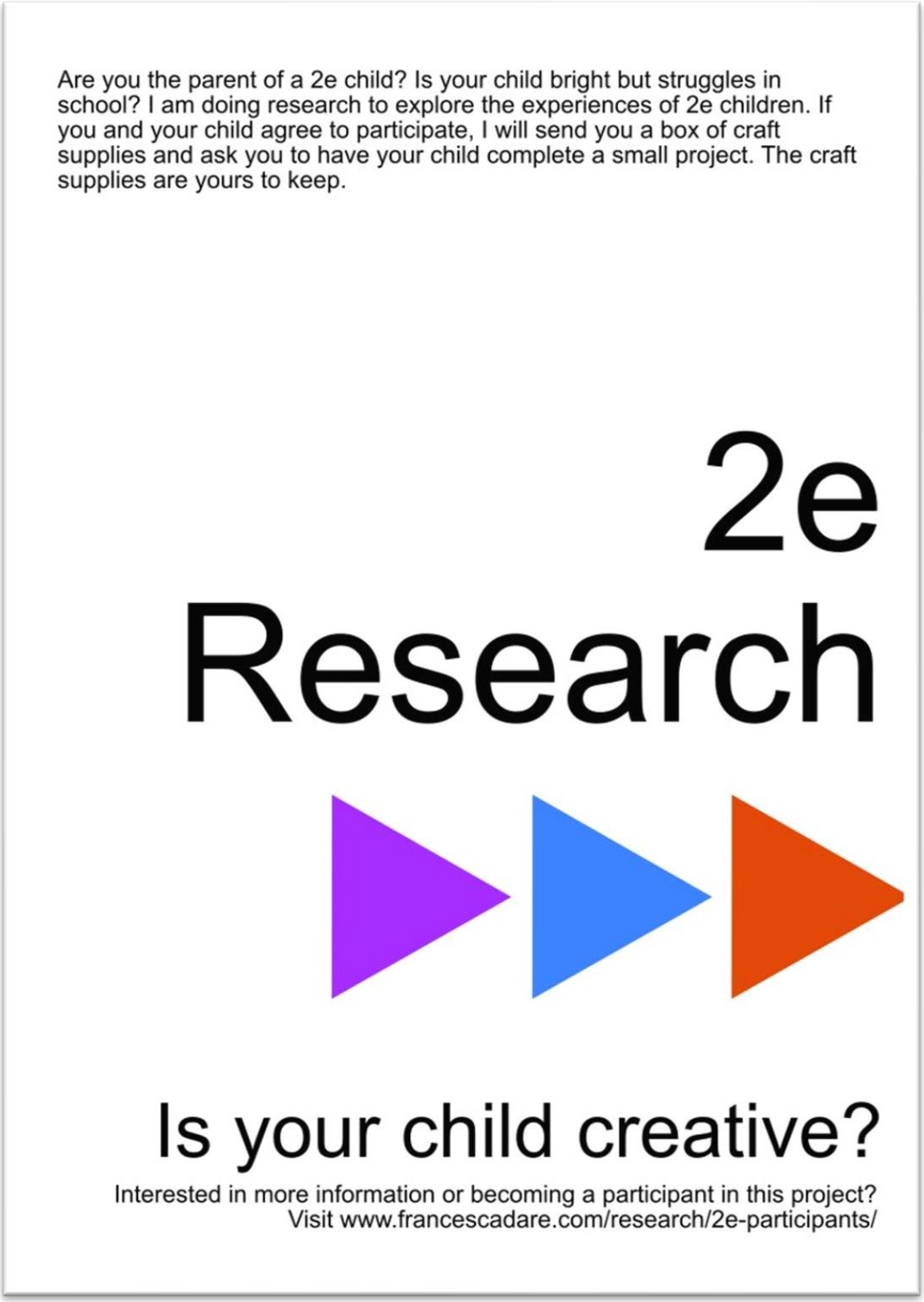
This e-mail is private and confidential to the named recipients only. The unauthorised copying or passing on of any information contained in this e-mail to persons other than the named recipients is strictly forbidden.

Mensa
The High IQ Society

1946 - 2021

Appendix C: Poster for Facebook Group

This poster was approved by Lyn and was posted in her Facebook group. The post was linked to: https://www.francescadare.com/research/2e-participants/



Appendix D: Kit Photographs





Appendix E: Kit Instructions

2e & Me Research Kit Instructions

Kit Contents

- Instruction Sheet
- Consent Form
- Activity Guide
- Designer Statement Cards
- White T-Shirt
- White Armband
- Fabric Markers
- Neon Fabric Paint
- Glow Pen
- Metallic Markers
- Transfer Paper
- Crystal Stickers (2E)

Kit Instructions

1. Read and complete the **consent form** with your parent or guardian before you start.
2. Check you have all the kit contents and find a quiet place to work.
3. Use the supplies you like in this kit to design your personalised t-shirt & armband following the **Activity Guide**. You do not need to use all the supplies in the kit.
4. Complete the **Designer Statement Cards** to share more about yourself, how you think and what your designs mean. If you prefer to use a computer, you can find a digital option at: https://www.francescadare.com/research/crp/2e-and-me/
5. Join the **2e Hall of Fame**! Ask your parent or another adult to help you take photos of your designs and statement cards (Front, Back, and Armband) and send along with your consent form to heythere@francescadare.com or load to https://www.francescadare.com/research/crp/2e-and-me/ by _____ and your designs will join the 2e Hall of Fame.

*There are no right or wrong answers. Your completed project is yours to keep along with the craft supplies in this kit.

Note For Parent / Adult

2e & Me is an individual activity to better understand the 2e experience. Do help your child if necessary, but please ensure they complete the activity as independently as possible and without influence.

If you provide any assistance please note on the statement card how you helped (ie. reading, writing, taking photos, etc). I would also greatly appreciate any feedback you have about this 2e & Me activity. Please email me at heythere@francescadare.com with any feedback or questions.

White T-Shirt

Children's crew neck T-shirt made of cotton/Lycra rib. 40°C mashine washable, can be ironed, suitable for tumble dryer.

Textile Markers

Suitable for children aged 3 and over, adults should complete the ironing process for young children and supervise with older children. Allow to dry for 6-24hrs after application. Then iorn inside out for 5 minutes on the decorated section on the cotton setting.

Neon Fabric Paint

Suitable for children aged 3+, adults should complete the ironing process for young children and supervise with older children. Wait for paint to dry, iron on reverse to make the design permanent.

Glow Pens

Suitable for ages 6+. Use pens to add glow-in-the-dark highlights. Expose to light a source for a few minutes, turn off the lights and watch them glow. Suitable for paper, fabric & more. Allow to dry overnight.

Metallic Markers

Non-permanent when used directly on fabric, suitable for use with transfer paper.

Transfer Paper

Compatible with inkjet printers. Compatible with pigment ink and dye ink.

1. Draw or Print your design on the BLANK Side of transfer paper. Set Paper Type to Plain Paper or Photo Paper. Set Printing Quality to Photo or High Quality Photo.

2. Cut out your design and peel from the logo paper. Place UPWARDS onto appropriate position of T-shirt place your t-shirt on a SOLID surface (Don’t use ironing board as it’s too soft) and use your ironing tool to smooth out creases on shirt.

3. Cover with Teflon Paper (included in the pack). Note: The teflon paper is two-sided so theres no wrong side.

4. Set Iron to High Temperature (like Cotton/Jeans Setting) and TURN OFF steam. Apply FIRM, EVEN and HEAVY pressure and iron each area of the image for 5 seconds. Circularly press and iron the image for 3 minutes total paying special attention to the corners.

Tips for washing and storing fabric with transfer:

- Don't wash within 48 hours after transfer.
- Wash before wearing on cold.
- Do not tumble dry.

Edinburgh Napier University Research Consent Form

Edinburgh Napier University requires that all research participants give their written consent to participate in research studies. Please read the following and sign this consent form if you agree with what it says.

Study: 2e & Me: The 2e/DME Experience

1. **Study goal:** The goal of the '2e & Me: The 2e/DME Experience' study is to explore the lived experiences of 2e children aged 6+. I agree for my child to participate in the study and to provide documentation of their finished work.
2. **Anonymity/Confidentiality:** I have been advised that I my child's responses and creative work will be anonymised. Their name will not be linked with the research materials, and they will not be identified or identifiable in any report produced by the researcher.
3. **Voluntary participation:** I understand my child's participation is voluntary and that if at any time during the activity I or they feel unable or unwilling to continue, they are free to stop. I may withdraw my child without negative consequences. However, after the data has been anonymised, or after project submission or publication of results, it will not be possible for their data to be removed.
4. **Opportunities to decline:** In addition, my child is free to decline to answer any particular question or questions, or to have any particular item photographed.
5. **Opportunities to ask questions:** I have been given the opportunity to ask questions regarding the research and my questions have been answered to my satisfaction.
6. **Data use:** I understand that any creative work, journaling, and interpretive data created by the researcher during this study may also be used in conjunction with my child's data and responses.
7. **Legal rights:** I have read and understand the above and consent for my child to participate in this study. My signature is not a waiver of any legal rights. I understand that I can keep a copy of the consent form for my records.
8. **Future contact:** I understand and agree the researcher may contact me in the future regarding this project and my data. My preferred contact method and contact information is: (please provide email and/or phone contact)

_____

Informed consent: I agree to allow my child to participate in the research project "2e & Me: The 2e/DME Experience" to be conducted by Francesca Dare, Masters Student at the School of Arts and Creative Industries, Edinburgh Napier University. PVG membership number: 2111 0225 5295 4493. Disclosure Number: 3000 0000 0137 6163

Required special permissions (please tick yes or no)	**Yes**	**No**
I agree to allow the researcher to use photographs and provided by me as part of this study. In this situation, any photographs taken with people present will be anonymised and the person's identity and facial features will be blurred/obscured during the final documentation of this project.		
I agree to allow the researcher to record any emails or conversations with myself and my child during the study if necessary. These records will be used to create transcripts and timeline of the project. The records will be securely stored in encrypted digital files and audio recording will be deleted immediately after transcription.		

Participants/Child's Name

_____

Parent/Guardian's Name

_____

Parent/Guardian's Signature Date

_____ _____

****

Researcher: I have explained and described in detail the research procedure to the participant and answered any questions that the participant had about the study. I will retain one copy of the informed consent form for my own records.

Researcher's Signature Date

_____ _____

Appendix F: Activity Guide and Designer Statement Cards

2e & Me

Activity Guide

My Superpower

Front of T-Shirt

Use the supplies you like to decorate the **front** of your t-shirt in a way that expresses your **Superpower**.

Try thinking about

- What makes me unique?
- How do I solve problems?
- How does my 2e identity help me?

My Superteam

Back of T-Shirt

Use the supplies you like to decorate the **back** of your t-shirt in a way that expresses your **Superteam**.

Try thinking about

- Who else is like me?
- What teams or groups am I part of?
- How does it feel to be in my 2e team?

My Defence

Armband

Use the supplies you like to decorate the **armband** that expresses your **Defence System**.

Try thinking about

- What do you do when things get tough?
- Who helps me when I need it?

*Remember, there are no right or wrong answers. Use the Designer Statement cards included to explain your designs and be sure to send your photos to be included in the 2e Hall of Fame.

About Me

Designer Statement Card

Name: _____

Age: _____ School Year: _____

2e Identity/Diagnosis:

_____

Self identified ☐ or received diagnosis from specialist practitioner ☐

Age when I was 2e Identified: _____

My Favourite Subject: _____

I am the best at:

_____

I need the most help with:

_____

Assistance I received to complete this 2e & Me activity (if any):

_____

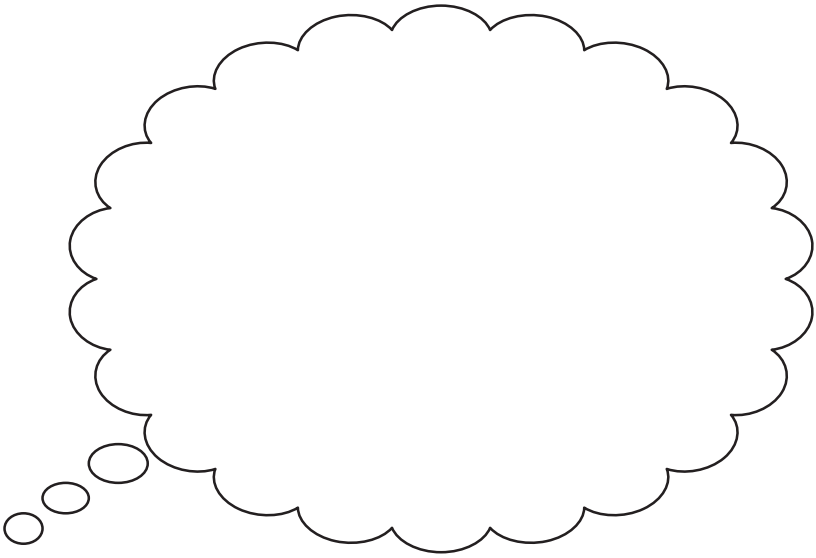
_____

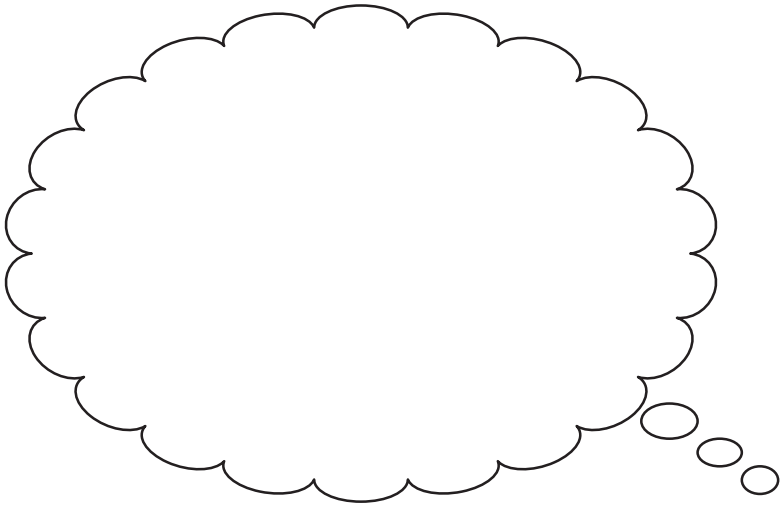
_____

My Superpower

Designer Statement Card

In your own words, explain how your design shows your superpower.

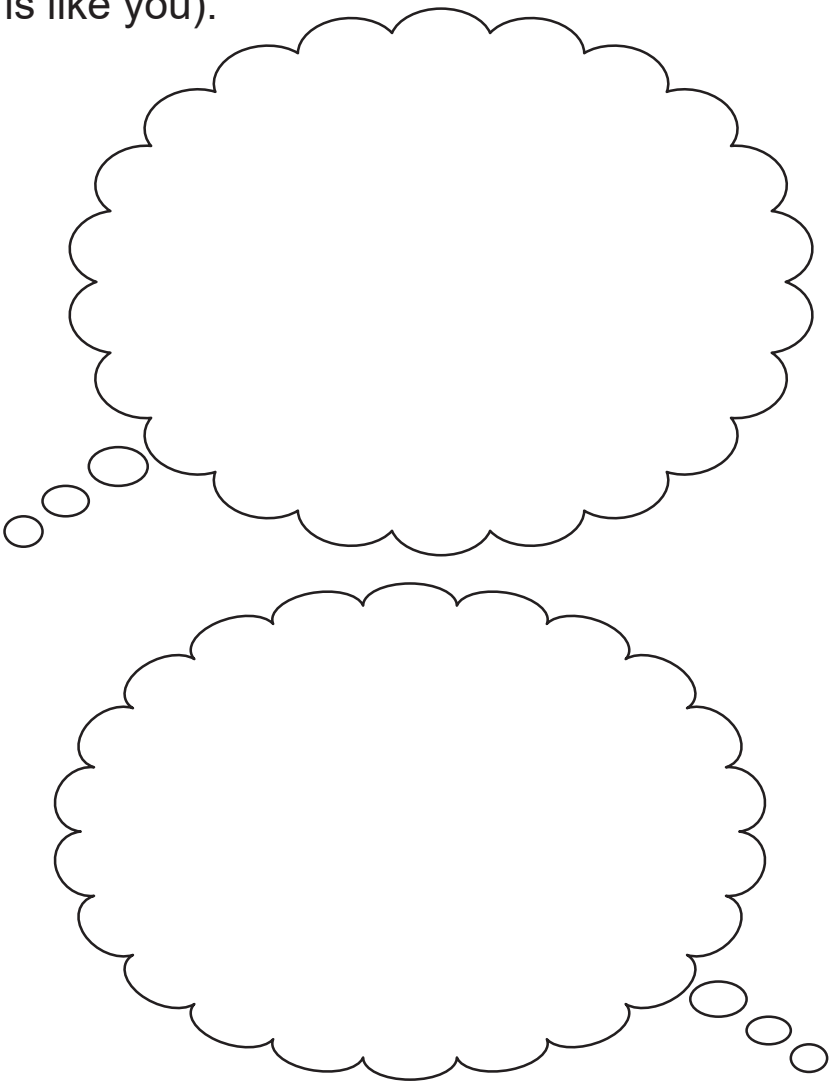




My Superteam

Designer Statement Card

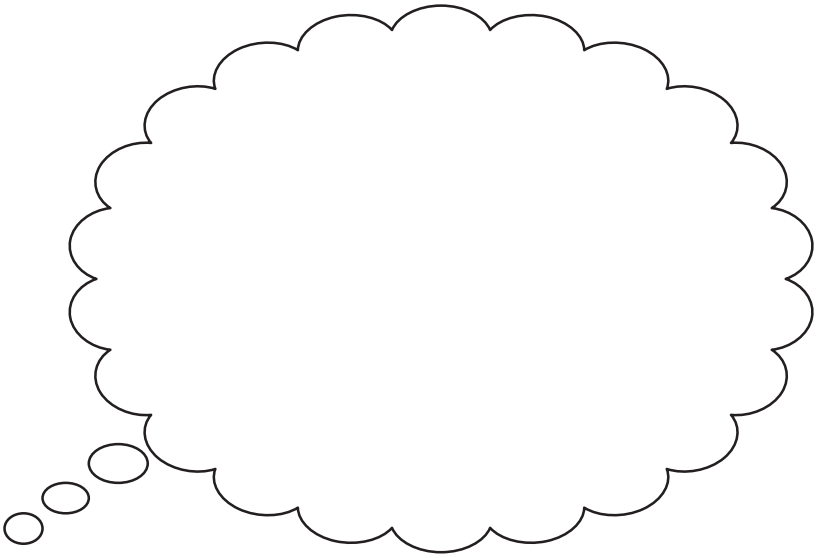
In your own words, explain how your design shows your superteam (who else is like you).

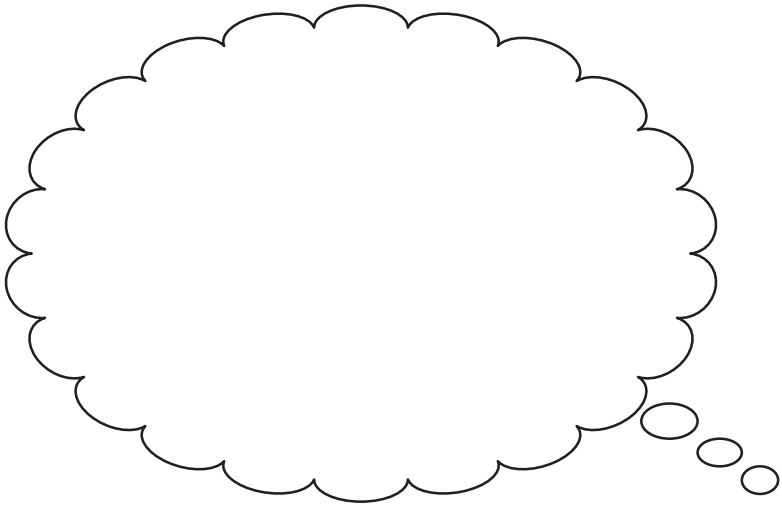


My Defence

Designer Statement Card

In your own words, explain how your design shows your defence system.





Appendix G: Participant 1 Response Photographs

Image 1

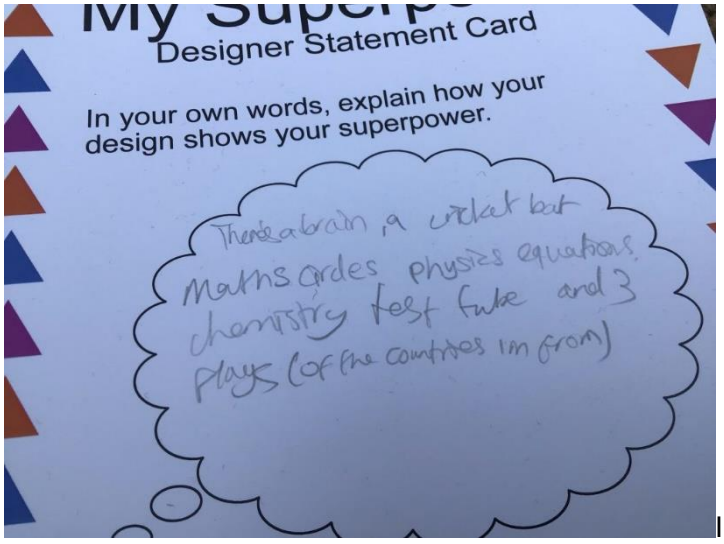


Image 2

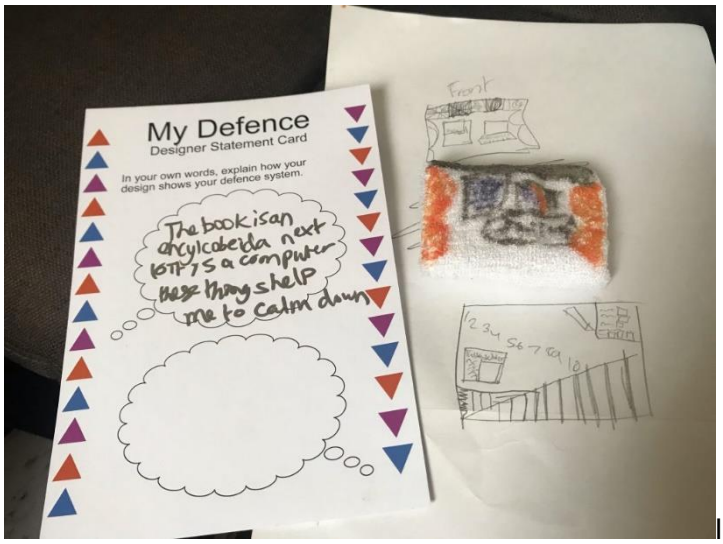


Image 3

Appendix H: Email from Participant 1 Parent

On 13 Apr 2022, at 10:37 pm, [redacted] wrote:

> Earlier in the week [redacted] created the above
> He made a mistake at the back and he got really upset and refused to carry on
> So sorry
> I'd planned for [redacted] to do [redacted] today after school but my 4 year old has a vomiting bug so it didn't happen
>
> [redacted] really enjoyed creating his design, he planned it and loved the art materials
>
> Sent from my iPhone

Appendix I: Participant 2 Response Photographs

Image 1

Image 2

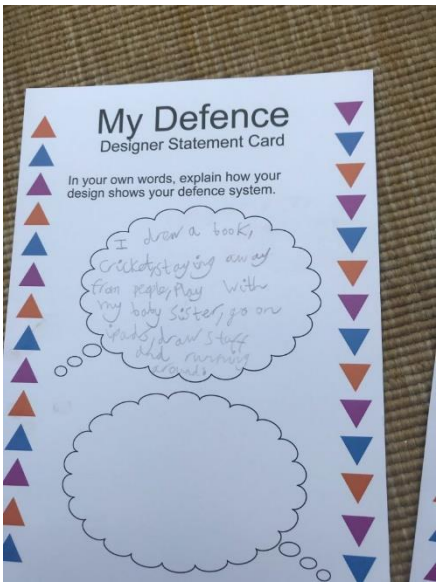


Image 3

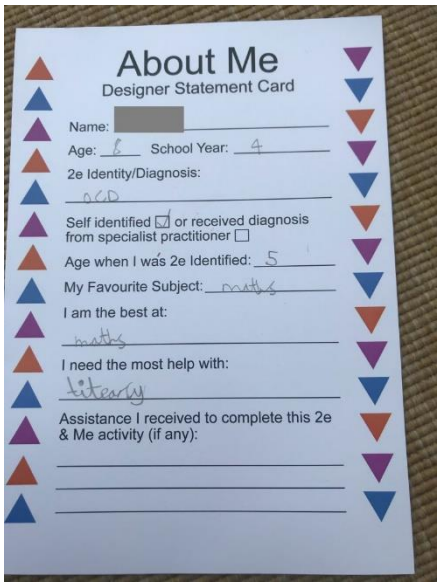


Image 4

Project Workbook

This project has a corresponding digital workbook available online at:
https://www.francescadare.com/research/crp/#work

The following pages are from this digital workbook.

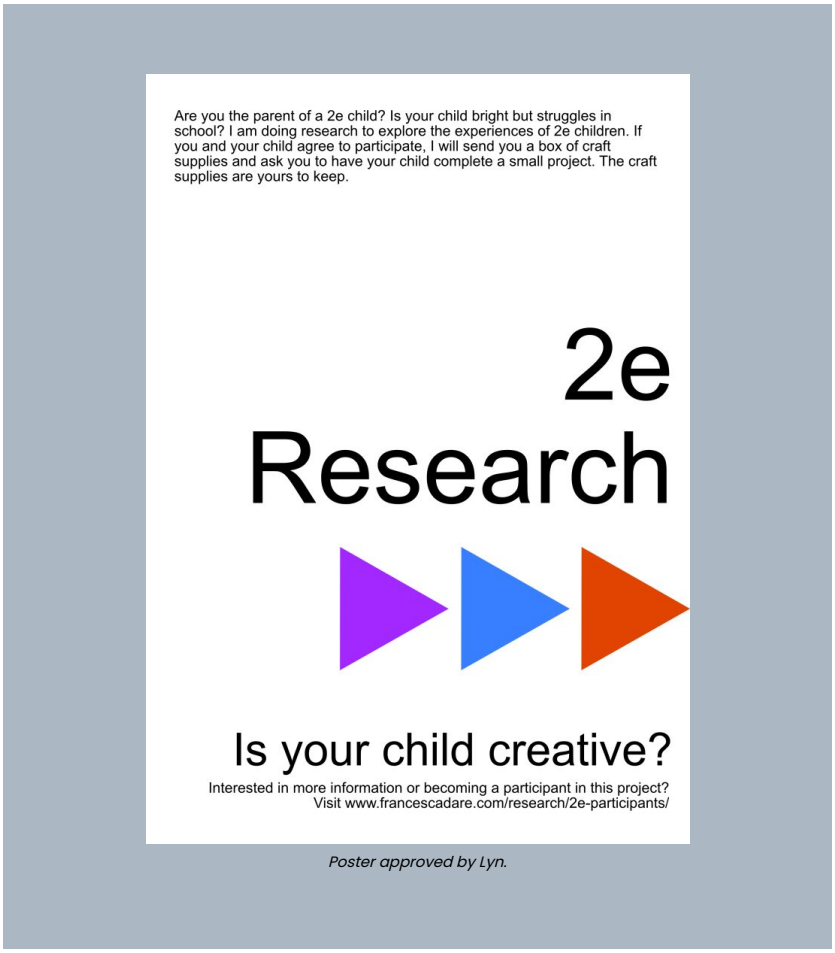
Community Collaboration

Collaborative Research Project / 6 March 2022

The 2e/DME community in the UK is particularly small. Numbers which are available for England show that out of 8.9 million pupils, only 60,000 are currently identified as 2e/DME. As such, connecting with this community was difficult. When I was identified as a child, I was the only 2e/DME child in my home town.

I initially reached out to Potential Plus UK and the University of Glasgow's Scottish Network for Able Pupils to see if they wanted to collaborate on this area, they were the only 2 charities that indicated 2e/DME on their website (both are primarily Gifted charities). Unfortunately I was unable to connect at the right time and get set up with one of these charities. I messaged some others across the UK, Canada and the US, but with limited sucess.

I finally reached out to Mensa UK using their online form, and to my surprise they replied and put me in contact with Lyn Kendall who supported this project with advice and connection to her online group of parents with 2e/DME children. She asked me to produce a poster to be put on the page looking for participants, and this is what was approved:



Poster approved by Lyn.

Given the small size of this community, it is not surprising the difficulty found in obtaining research partners, however some participants did come forward and you can see more about this project and their designs on the project page.

If you have any questions about ongoing projects please reach out to heythere@francescadare.com

This post relates to a project page, view the project page to see other related posts and outcomes.

Go to Project Page

Click Here to return to Journal Posts on Project Page
or click Next Post below to keep reading posts in this category

References & Attributions

Feature Image for this post created by pch.vector
Available at: https://www.freepik.com/vectors/employee

Design Journal

Welcome to my design journal. Here you will find posts about process for projects, workshop experimentation and reflective writing.

Search ...

Categories

Select Category

Recent Posts

Napier Design Show Submission 2022
Speculative Design – Craft Object & IoT
Finishing Our CraftTech Lamp and Sharing Online
Receiving Responses
Working in the Workshop with Master Artisan Neil Fyffe

Archives

May 2022
April 2022
March 2022
May 2021
April 2021
March 2021
February 2021
December 2020
October 2020

Packaging & Kit Design

Collaborative Research Project / 13 March 2022

There were many things to consider with the kit creation, including contents, size, cost, and encouraging engagement.

Probe Kit Contents

There were a number of things to consider when deciding on the contents of the probe kit from what would be engaging to children, to cost and size.

Probe Kit Research Concept

Partially inspired by Noah (15 years) from Coloured Fish Products who designs t-shirts to raise awareness of Dyslexia and communicate his lived experiences (Coloured Fish Products, 2020), I decided a t-shirt based activity could be ideal for the probe kit as it is arguable a more interesting medium than pen and paper (these kids are not typical so why have them do a typical activity). Plus, as a t-shirt can be worn, it pulls on the effects that fashion, textile and graphic design can have on the world. It allows for multiple design opportunities, such as facilitating personal expression, empowerment and bringing awareness to 2e if worn, or displayed etc. Asking the children to design their own t-shirts through a guided research-based project will allow them to have a functional piece of design to own and keep for themselves.

Items ordered from Amazon (16/02/2022)

- Tie Dye Kit, 26 Colors Art Fabric Textile – £9.99
- 5x Brown Cardboard Square Box – £4.75
- Metallic Marker Pens set of 5 – £4.00
- Neon Premium Fabric Paints 6x25mL – £5.75
- TransOurDream Tru-Heat Transfer Paper Inkjet (10 Sheets) – £3.99
- Fruit of the Loom Childrens T Shirt White Size 9-11 – £2.89
- Pack of 8 Quality Colored Fabric Markers T Shirt Pens – £4.99

Audio Cards – 02/03/2022 – I investigated purchasing audio cards for the instructions but these were costly and most of the options only recorded up to 30 seconds of sound. I decided not to proceed down this idea further – but it could be revisited another time.

Developing the kit's instructions

The kit instructions are arguably one of the most important aspects of the probe kit. The questions posed need to be probing but not too directive, allowing for the children's creativity. They should also be easily understood by a wide range of age groups.

Instruction File Versions (Development)

Initial Instructions V1 – 07/03/2022
Instruction & Card Files V2 – 08/03/2022 – Added armband/defence concept to Activity Guide, Created overall instructions with parent notes and added Designer Statement Cards

Instruction-Cards-V1.pdf Download

2e-Kit-Instructions-Cards-V2.pdf Download

2e-Me-Research-Kit-Printed-Instructions-Cards Download

Kit Contents Testing

To finalize the kit contents, I tested the purchased supplies for quality, usability and suitability.

Additional Items purchased from The Range Edinburgh (08/03/2022)

- Tie Dye Creations Kit – £2.80
- Crystal Sticker 'E'- £0.99
- Crystal Sticker '2' – £0.99
- Glow Pens – £1.50
- Textile Markers (set of 20) – £7.99

I purchased an alternate for the tye-dye bottles but they were also too large to fit into the Royal Mail's Large Letter dimensions. I thought again about what benefit having this in the kit would have and while it was a nice thought to give the children flexibility over a simple white t-shirt, it was ultimately decided the dye offered little benefit considering the difficulty I was having due to its size. I also thought about some of the issues the parents and children would have in using the tye-dye such as mess and inability to get the desired result and decided it was not going to be beneficial. I have used similar kits in previous personal projects, so did not need to test these to make that judgement.

Design Journal

Welcome to my design journal. Here you will find posts about process for projects, workshop experimentation and reflective writing.

Search …

Categories

Select Category

Recent Posts

Napier Design Show Submission 2022
Speculative Design – Craft Object & IoT
Finishing Our CraftTech Lamp and Sharing Online
Receiving Responses
Working in the Workshop with Master Artisan Neil Fyffe

Archives

May 2022
April 2022
March 2022
May 2021
April 2021
March 2021
February 2021
December 2020
October 2020

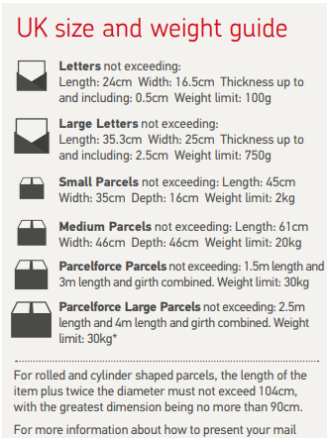
The rest of the purchased products I tested in full. See the final list of contents below.

Kit contents testing

. . .

Packaging Design

When considering how the contents of the kit could be contained and transported, a sturdy box-style packaging would be more suitable than a bag type of shipping method. This would better ensure the contents arrive safely. The cost of shipping is also an important factor in the feasibility of this project. Based on Royal Mail guides, the two most suitable options would be either a Large Letter size kit or a Small Parcel size (with Large Letter being the most economical option and would allow the kit to be posted through a letterbox meaning someone doesn't need to be home to receive it).



UK size and weight guide

Letters not exceeding:
Length: 24cm Width: 16.5cm Thickness up to and including: 0.5cm Weight limit: 100g

Large Letters not exceeding:
Length: 35.3cm Width: 25cm Thickness up to and including: 2.5cm Weight limit: 750g

Small Parcels not exceeding: Length: 45cm Width: 35cm Depth: 16cm Weight limit: 2kg

Medium Parcels not exceeding: Length: 61cm Width: 46cm Depth: 46cm Weight limit: 20kg

Parcelforce Parcels not exceeding: 1.5m length and 3m length and girth combined. Weight limit: 30kg

Parcelforce Large Parcels not exceeding: 2.5m length and 4m length and girth combined. Weight limit: 30kg*

For rolled and cylinder shaped parcels, the length of the item plus twice the diameter must not exceed 104cm, with the greatest dimension being no more than 90cm.

For more information about how to present your mail

Royal Mail Size and Weight Guide (Royal Mail, 23/02/2022)

UK Standard

Our Standard services offer a range of reliable delivery options for your non-valuable items.

Royal Mail **1st Class and 2nd Class**

		1st Class	2nd Class
Size	Weight up to and including	Price	Price
Letter	100g	85p	66p
Large Letter	100g	£1.29	96p
	250g	£1.83	£1.53
	500g	£2.39	£1.99
	750g	£3.30	£2.70
Small Parcel	1kg	£3.85	£3.20
	2kg	£5.57	£3.20
Medium Parcel	1kg	£6.00	£5.30
	2kg	£9.02	£5.30
	5kg	£15.85	£8.99
	10kg	£21.90	£20.25
	20kg	£33.40	£28.55
Includes compensation up to		£20.00	£20.00

Prices are exempt from VAT.

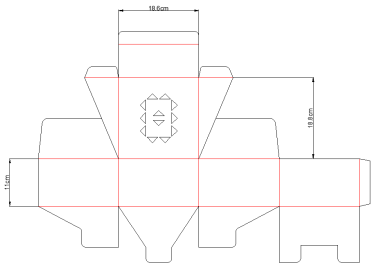
Royal Mail Price Guide (Royal Mail, 23/03/2022)

Items ordered from Amazon (23/02/2022)

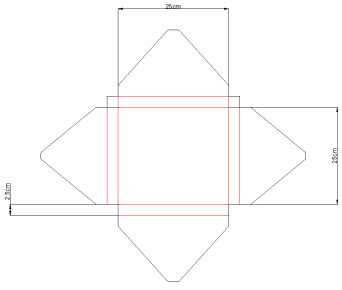
- 10x White C4 A4 size letter strong cardboard shipping box – £9.45

Box Design Exploration

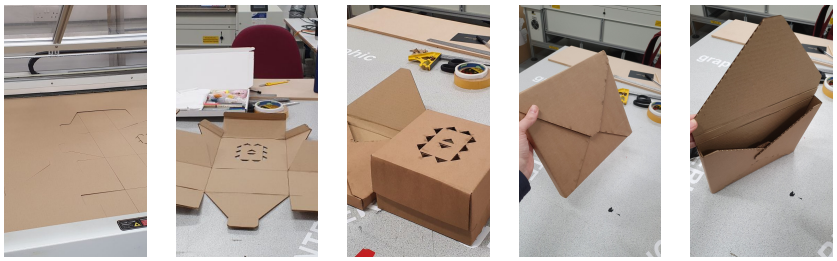
Buying readily available shipping boxes could be a cost-effective and simple way to ship the kits, but how do we make these kits something children would be interested in opening?



Small Parcel Cut Plan DWG (03/03/2022)



Large Letter Cut Plan DWG (03/03/2022)



Box prototypes cut from the lazer cutter (03/03/2022)

Parcel Design Thoughts: Could cut-outs allow for an interesting peek into the box and intrigue a child? The size also allows for easy packing and has an interesting opening, but it would need to be wrapped in plastic or paper for safe transport - not really idea environmentally to have too much packaging. It is sturdy in construction.

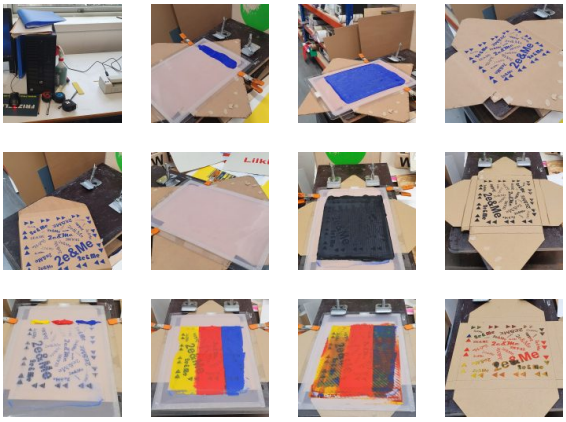
Large Letter Design Thoughts: I loved getting letters as a child, and inspired by the Royal Mail name for this type of parcel I made a box that looks like a large letter. This would be improved with graphic design work, but construction wise it is sturdy and would provide good support for the contents. It would also be easily broken down and recycled. The interior size could cause problems depending on the final decisions around contents. The tie-dye kits don't fit well, how important is this for the project? Should be box be adapted or the tye-dye idea removed?

Prototyping reflection notes (03/03/2022)

Graphic Design

After exploring initial box options, I also decided to explore graphic elements that could enhance the kit design and make it desirable to children.

I started with a single screen print and explored different colour techniques. My initial ideas on 08/03/2022 included multiple colours for the triangles (to match the poster originally designed to attract participants). However, it costs approx £3.50 to create a screen and each colour requires its own screen. The original ideas would have required 4 screens for the main box only. I attempted to screen print the triangles onto one of the box flaps without creating a special screen for it, but the ink was very unpredictable. This means I needed to create another screen for the flap.



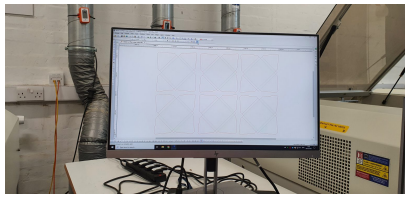
Graphics for Letter Style – Initial Concept Ideas PDF (08/03/2022) Download

Graphic design idea testing 09/03/2022

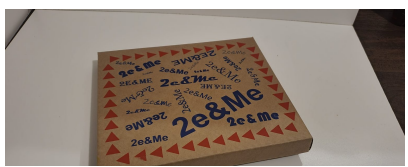
. . .

Creating The Final Kits For Posting

In the end I decided to go with the 3 primary colours of red blue and yellow and a total of 3 screens to create my final boxes. I set the lazer machine to cut out six boxes and set up scrap pieces of cardboard to help me align the screen in the same place for each box and screen printed each colour one at a time.



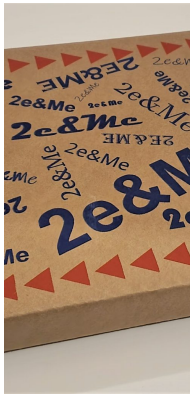
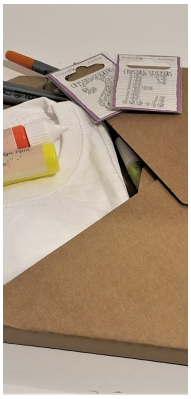
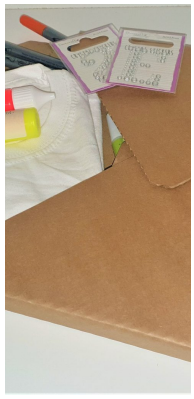
Making Multiples 09/03/2022



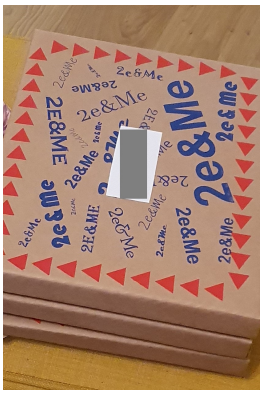
Screen printing run of boxes with final graphics 09/03/2022

Probe Kit Contents – Final List (Date)

- Crystal Sticker '2' – £0.99
- Crystal Sticker 'E' – £0.99
- Glow Pen – £1.50/3
- Textile Markers – £
- Metallic Marker Pens – £4.00 /2 = £2.00
- Neon Premium Fabric Paints – £5.75 /3 =
- TransOurDream Tru-Heat Transfer Paper Inkjet – £3.99/10 =
- Fruit of the Loom Children's T Shirt White – £2.89
- Sweatband





Posting the final kits.

This post relates to a project page, view the project page to see other related posts and outcomes.

Go to Project Page

Click Here to return to Journal Posts on Project Page
or click Next Post below to keep reading posts in this category

References

Coloured Fish Products, 2020. [Online]
Available at: https://www.facebook.com/colouredfishproducts/
[Accessed 13 12 2020].

← Previous Post

Next Post →

Home Design Research Journal About

Design Show 2021
MA Coursework Submission

Copyright © 2022 Francesca Dare

Receiving Responses

Collaborative Research Project / 18 May 2022

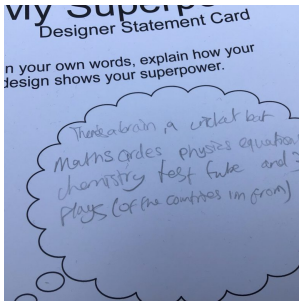
The completed kits were sent to the participants homes and they were asked to complete the work within 2 weeks. Later extra time was given as it was over the Easter weekend.

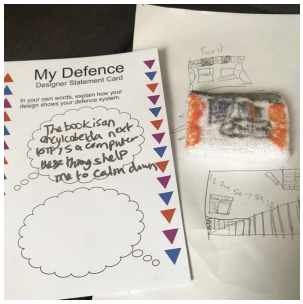
Out of the 3 agreed participants, I received 2 partially completed responses.

Participant 1

Participant 1 did not complete the back of the t-shirt as they "made a mistake at the back and … got really upset and refused to carry on". Perfectionism is a common trait amongst 2e children, so this is not entirely surprising. Especially considering the time and thought evident in the work completed for the front of the shirt. (13/04/2022)

The arm band from Participant 1 was received a week later. It was nice to see that they re-visited the project.

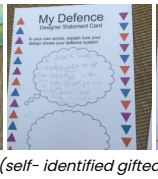


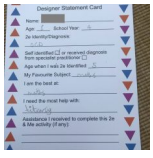


Participant 1 – Aged 10 (identified gifted with ASD and ADHD)

Participant 2

Participant 2 submitted just the armband of the project. They identified as self-diagnosed, which was OK for this project as it can be difficult sometimes to get a formal diagnosis. (22/04/2022)





Participant 2- Aged 8 (self- identified gifted with ASD, ADHD and OCD traits)

Participant 3

Participant 3's parent confirmed that the kit was received, and asked for extra time to complete it. They were followed up with, but no completed response was received.

This post relates to a project page, view the project page to see other related posts and outcomes.

Go to Project Page

Design Journal

Welcome to my design journal. Here you will find posts about process for projects, workshop experimentation and reflective writing.

Search …

Categories

Select Category

Recent Posts

Napier Design Show Submission 2022
Speculative Design – Craft Object & IoT
Finishing Our CraftTech Lamp and Sharing Online
Receiving Responses
Working in the Workshop with Master Artisan Neil Fyffe

Archives

May 2022
April 2022
March 2022
May 2021
April 2021
March 2021
February 2021
December 2020
October 2020

Project Webpage

Recommended viewing of this project is on the project's web page available at: https://www.francescadare.com/research/crp/

The following pages are copies of the online versions included for project submission.

COLLABORATIVE RESEARCH PROJECT

The 2e Experience

This arts-and-design based research project explores the lives experiences of children identified as 2e or with multiple exceptionalities through the use of a creative probe kit.

About

Brief: For this collaborative research project, we were asked to identify an area of research we would like to pursue using collaborative research methods.

Terms: Twice or Multiple Exceptionality (often called 2e or DME) occurs when an individual has concurrent high ability and learning difficulties (Foley-Nicpon et al. 2013).

Opportunity: 2e/DME neurodiversity is often hidden, misdiagnosed, overlooked, or even unheard-of (Foley-Nicpon et al., 2013). As a result, there is a paucity of research and little understanding of what it means to be 2e. I was identified as 2e as a child and was the only one in my peer group with this identification. For this collaborative project, I wanted to explore whether the sense of community had changed. As a 2e/DME designer and researcher, how can I better understand the 2e/DME experience from more than my own point of view?

Objective: The aim for this collaborative project was to increase understanding about 2e/DME neurodiversity in children through collaborative research methods.

Stakeholders: Educators, Researchers, 2e/DME Children and Parents

Project Development

This project was developed to encourage enthusiasm from the participants. Finding participants was the first challenge, which was assisted by a connection made through Mensa. Then was the development of the kit and its contents. While bought boxes were investigated, the final solution included a custom made box – making it more visually and tactically interesting for the participants receiving it through the post.

Journal Entries - Workbook

Below are my design journal entries concerning this project (which make up my digital CRP workbook).

Community Collaboration

The 2e/DME community in the UK is particularly small. Numbers which are available for England show that out of 8.9...

Read More

Packaging & Kit Design

There were many things to consider with the kit creation, including contents, size, cost, and encouraging engagement. Probe Kit Contents...

Read More

Table of Contents

Receiving Responses

The completed kits were sent to the participants homes and they were asked to complete the work within 2 weeks....
Read More

Additional Pages

Below are links to additional pages created in relation to this project. The 2e Participant Page includes copies of all the documents sent within the kits.

2e Research Introduction Page

2e Research Exploring the Twice Exceptional Experience Are you the parent of a 2e child? Is your child bright but...
Read More

2e Participant Page

Thank you for participating in the 2e & Me Activity. If you have any questions please email heythere@francescadare.com. You can...
Read More

2e & Me Hall of Fame

Welcome to the 2e& Me Hall of Fame. Here you will see the fantastic designs and creations of participants in...
Read More

COLLABORATIVE RESEARCH PROJECT REPORT

2e & Me: The 2e/DME Experience

Acknowledgements

I would like to thank Lyn Kendall, the participants, and their parents. Without them this project would not have proceeded.

Preface

I was identified with twice-exceptionality as a child and was the only one in my school. It felt strange to be in two worlds at once, as I was put in the gifted education groups as well as support sessions. I opted to stay in my local public school and had an individual education plan put in place as the gifted education programme available in another school did not have experience with 2e/DME children. Also, I had a great group of peers and staying in my own school provided stability. However, being 2e in school was not a straightforward experience, and it is my personal experiences that have inspired this research project.

Keywords

Emancipatory Research, Participatory Design, Twice-exceptional, Cultural Probes,

Introduction

We all have strengths and weaknesses – but the experiences and exceptionality of twice-exceptional (2e) people, those with dual/multiple exceptionality (DME), are distinctive and unique to this type of neurodiversity.

Table of Contents

Children with multiple-exceptional neurodiversity exhibit high abilities combined with one or more special educational needs (The Good Schools Guide [no date]). Previously called handicapped-gifted (Yewchuk and Bibby 1989) or gifted learning disabled (Brody and Mills 1997), more recent terms include dual or multiple exceptional (Potential Plus UK 2020) and twice-exceptional (Ronksley-Pavia 2015). 2e/DME children have a double or multiple-neurodiversity identity. In some ways, these children can identify with their gifted classmates, but they can also identify with those who require adjustments for special education needs. They experience a unique diversity that is multifaceted, paradoxical, and often challenging to recognise.

Recent research suggests that approximately 60,000 pupils in England are currently identified as 2e/DME– "a likely underestimate as many are home educated or not identified" (Hawker 2021). Government statistics indicate 8.9 million pupils attend school in England (gov.uk 2021), which means the number of pupils identified with 2e/DME in England is be extremely small, similar to other countries. This small number is likely because 2e/DME is a unique diversity and can be tough to recognise. Students with 2e/DME are often hidden, misdiagnosed, overlooked, or unheard-of (Foley-Nicpon et al. 2013). They are a minority within a minority. In a survey of school psychologists in the US, a majority (60%) had little or no familiarity with twice-exceptionality (Robertson et al. 2011). There also appears to be a lack of UK-based research into understanding and awareness of this unique identity, its strengths, and needs. As a 2e/DME designer and researcher, I wonder how I can better understand the 2e/DME experience from more than my point of view and improve research and awareness.

Aims

As well as satisfying my own curiosity, the ambitions of this research project support the current aims of the Scottish Network for Able Pupils (SNAP).

The current aims on SNAP's website are:

- "To bring together relevant developments and ideas from a variety of disciplines and initiatives and make them accessible to schools and teachers." (University of Glasgow [no date])
- "To ensure a strong national awareness of the issues as they arise and support national initiatives that pertain to the education of more able pupils." (University of Glasgow [no date])
- "To support and model for schools' appropriate challenges for more able pupils within an inclusive " (University of Glasgow, n.d.)

While SNAP is concerned with all gifted/highly-able children, this project's scope only involves those uniquely identified as 2e/DME.

Specifically, this project aims were to:

- Act as a friend to the 2e/DME community
- Encourage creativity, positive thought, and innovation among project participants.
- Better understand the lived experience of 2e/DME children from their perspective and without judgement, prejudice, or stigma.
- Increase awareness of 2e/DME.

Approach

This qualitative research project uses an arts & design-based (Burge et al. 2016) emancipatory research paradigm (Noel 2016) to explore the lived experiences of 2e/DME children. The emancipatory research theoretical perspective in my Design Research and Practice originates in my own experiences of being a 2e/DME creative. The exploration of lived experiences lends itself to a phenomenological approach.

Unlike a positivist research paradigm, which believes in one logical reality that can be scientifically proven, calculated, or observed (Business Research Methodology [no date]), emancipatory research relies on the belief in more than one reality. It is a form of participatory action research that can give voice to both the individual and shared experiences, which is an integral part of this project's ethos.

> *"It [emancipatory research] is seen as a process of producing knowledge that can be of benefit to disadvantaged people, and its key aim is to empower its research subjects."*
> *(Noel 2016, p.457)*

My role as a researcher on this project is to empower participants to share their knowledge as experts in their experiences. I act as a research guide, in collaboration with the children as researchers.

Context

The importance of 2e/DME research

One of the barriers to raising awareness about 2e/DME is a general misconception that gifted children do not have learning difficulties. In the early 1900s, research into intelligence focussed on the idea that intelligence is a global construct. Researchers tried to develop intelligence tests to quantitatively measure intelligence in a single score, known as an IQ score, with 100 being average.

In the 1980s, theories of multiple intelligences began to be developed. Howard Gardner's (1986) theory of multiple intelligences added new ways of thinking about intelligence by changing the definition from a single score to a range of abilities. And Sternberg's 1988 (cited in Blesch 2012, p.2) triarchic model of intelligence described three attributes of intelligence: analytical, creative, and practical. These theories challenged the idea that someone's intelligence can be summarized in a single score.

Yet the lack of awareness and understanding about multiple exceptionalities continues (Lucinda 2016). Children who have a multiple exceptionality are hard to spot. Sometimes their 'giftedness' hides their learning difficulties and vice versa, making identification difficult. (Lucinda 2016)

The uniqueness of 2e/DME children

The combination of disability and giftedness (high ability) in childhood

For some people, the word 'disability' evokes the stereotype of lacking general intelligence (cited in Ronksley-Pavia 2015). This stereotype is inaccurate (Baldwin et al. 2019). Gifted children with vision loss, missing limbs, or other 'visible' disabilities are not any less intelligent because of these factors. Similarly, people with learning difficulties can have high intelligence.

Table of Contents

The Canadian researcher Françoys Gagné developed a widely-used *Differentiated Model of Giftedness and Talent* (Gagné 2008). This model focusses on the developmental nature of high ability, rather than focussing on achievement (Ronksley-Pavia 2015, p.322). Gagné's model is important as it includes the understanding that children have high cognitive abilities, but they might not be high achievers. This disparity can be particularly true if a 2e/DME child does not receive sufficient support for their learning difficulties, which affects their ability to demonstrate their cognitive potential.

Stigma, Identity, Stereotypes & Bullying

2e/DME children are identified with giftedness and one or more special needs. They are often stereotyped and subject to stigmatization associated with both 'disability' and giftedness (Ronksley-Pavia et al. 2019b). Ronksley's study on 2e/DME children's lived experiences in Australia reveals that many of these stigmas and misconceptions are prevalent in Western cultures. Both gifted and special needs children have strong feelings of being different from their peers. Despite their identities often being more hidden than other obvious forms of 'other.' Due to their strong feelings of isolation and absence of "like-minded peers and traits" (Ronksley-Pavia et al. 2019b, p.8), gifted children are at higher risk of bullying. Children with a disability label often feel feelings of embarrassment and exclusion.

> *"These children are often teased by their classmates, misunderstood by their teachers, disqualified from gifted programs due to their deficiencies, and unserved by special education because of their strengths"*
> *(Ronksley-Pavia 2015, p.326)*

Ronksley-Pavia et al. (2019b) describe the following five main themes in their initial analysis of the children's interviews: 1. Personal Interests, 2. Negative Experiences, 3. Support Networks, 4. Stress, coping and resilience and 5. Sense of Self. (See Appendix A: Table from "Privileging the Voices of Twice-Exceptional Children"). Their analysis further identified strong similarities between children's stigma narratives. As someone identified as 2e/DME as a child, I recognised my own feelings and childhood experiences within several of the statements these children said in Ronksley-Pavia et al.'s (2019) interviews, such as:

"I got 98%, so it was an A [grade]. People didn't believe that I got an A because they think, "He's got dyslexia how can he get an A?" Everyone's like, "Well how could he get such a good mark?" . . . . kids thought I cheated." – Buster (13 years old)

"I was getting dreams about me failing everything . . . One dream, I was just sitting there, and it was the start of the year, and I had just said one word to the teacher, and she said I had failed straight away. . . I normally fail English and I almost failed maths one time, that got me worried, because I don't like failing. [I feel] sad and annoyed [when I fail]" – Boomstick (aged 10 years)

The children also struggled with their identity due to stigma, stereotypes, and bullying. One child in the study commented that:

"I don't feel like I'm like this [Autism Spectrum Disorder (ASD)] . . . I don't see why I need a label, people have just looked down on me for being labeled as that . . . they think you're dumber, you don't have the same ability to do things. I am perfectly able to do the same things as others; sometimes I'm better than what is considered normal. I didn't want that related to me anymore . . . It was just essentially a label that people could make preconceived judgments about me . . . it was completely useless" – Ashley (16 years)

Identifying 2e/DME children can be challenging for many reasons. Some 2e/DME children try to hide their differences from peers to avoid stigmatisation, bullying, and feelings of being different. Experts agree that identification can lead to several positives, such as greater awareness and improved support for the child, such as appropriate challenges to keep them engaged, as well as greater understanding and compassion from educators (McPherson, 2015; Murawski & Scott, 2017). However, understanding and compassion can be difficult to attain from children's peer groups who may not fully comprehend the complexities of 2e/DME identities. (Ronksley-Pavia et al. 2019a)

Non-cognitive characteristics

2e/DME children demonstrate contrasts between high ability and low academic performance, but they also exhibit these contrasts in their non-cognitive characteristics (Beckmann and Minnaert 2018). Beckman's (2018) review of existing literature showed that children with 2e/DME experience elevated levels of frustration. Other potential non-cognitive characteristics include increased perseverance, heightened self-awareness, low confidence, social withdrawal, and negative attitudes toward school (Beckmann and Minnaert 2018, p.16).

2e/DME children often exhibit elevated levels of negative emotions, attitudes, self-perception, and struggle with interpersonal relationships. However, they also show higher than average levels of motivation, resilience, and coping skills, which make up a part of their positive personality traits (Beckmann and Minnaert 2018). In addition to these shared dualities, many 2e/DME children exhibit a remarkably elevated level of "inter/intra-individual variability in their non-cognitive characteristics" (Beckmann & Minnaert, 2018, p.17). Likely, support from parents and teachers and an understanding of their dual identity contribute to this uniqueness within the 2e/DME community.

The importance of children's involvement in research

While these children vary greatly as individuals, they also have some shared experiences. This research project is interested in the children's perspective of both areas (individual and collective). Per Articles 12 and 13 of the United Nations Convention on the Rights of the Child (UNCRC, 1989), children have the right to be involved in all activities that affect their lives (cited in Kellett et al. 2004). There are several positives to including children collaboratively in research, but there are also some negatives and limitations. Research with children is often undertaken in a school setting with a captive audience, resulting in a power issue to be considered (Kellett et al. 2004). The practical aspects of skill, competence and knowledge barriers must also be considered. Some researchers have suggested that "children can't tell truth from fiction; they say what the interviewer wants them to say" (Kellett et al. 2004, p.331). Thankfully, these perspectives have been mostly challenged because it is recognized that "adults are just as likely to blur truth and fiction as children because truth is itself a personal construct" (Kellett et al. 2004, p.331).

as children because truth is itself a personal construct." (Kellett et al. 2004, p.331).

For this research project, I consider the realities of these children's lives to be truth – as it is their reality regardless of the perceptions of outside adult perspectives (which is why a positivist approach would not have been appropriate in this project).

> *"There is conflict between the life and experiences of a twice-exceptional child who is first and foremost a child—one who is an active and experienced voice of intellectual strength and maturity—and the disability label he or she receives." (Ronksley-Pavia 2015, p.321).*

Table of Contents

Children can become researchers with appropriate direction, patience, and understanding, even leading their own studies (Kellett et al. 2004). In the context of this project, the children are working as collaborative researchers by creating and collecting data about their lives, thoughts, and feelings. They can express their experiences independently, in the comfort of their own space, without excessively directional or assumptive questioning.

Existing research and design work

As mentioned above, this project follows a Participatory Action Research (PAR) approach. This approach has been used with 2e/DME children to collaboratively design and develop strategies for teachers to support the special needs of 2e/DME students. (Haines, 2017). Similarly, Noah from Coloured Fish Products creates t-shirts designs to raise awareness of his dyslexia (Noah, 2014).

An example of a project designed to raise awareness and change stereotypes, Made By Dyslexia opened 'the world's first dyslexic sperm bank' to raise awareness about dyslexia and some famous dyslexics who are considered high intelligence or high achievers such as Albert Einstein. They also collected information about public perceptions and understanding about neurodiversity. Their film about this intervention won the 2018 D&AD Award Pencil (Made by Dyslexia & Y&R London, 2018).

Method

Ethical Considerations

Working with vulnerable groups. As this project involves working with children, I become a member of Disclosure Scotland's Protecting Vulnerable Groups to complete this project. This scheme helps ensure that people whose behaviour makes them unsuitable to work with children are prevented from doing 'regulated work' (mygov.scot 2021).

PVG membership number: 2111 0225 5295 4493

Disclosure Number: 3000 0000 0137 6163

Obtaining parental consent/ children's assent. The parents/guardians of the participants were given a consent form to review and give permission for their child to participate in this research project. The parents/guardians were reminded that participation is not mandatory, and they or their child can stop at any time (Appendix E).

Maintaining confidentiality. In this report, all participants are anonymized by using pseudonyms and editing identifying information out of photographs.

Participants

This project initially had six people reach out expressing interest to the collaborative partner, Lyn. Three of these participants subsequently contacted me. The three participants included two who were formally identified as 2e/DME and one who self-identified. Out of the three agreed participants, I received two partially completed responses.

A phenomenological approach: Using an arts/design-based cultural probe kit

This phenomenological qualitative research project used an arts/design-based cultural probe kit aimed at engaging children as participants to share their lived experiences.

This style of collaborative research relies on objects rather than talking or watching. This playful approach can help engage communities to express their perspective before we push for change and create opportunities to increase awareness. Engaging the community and the children to be self-reflective through creativity and play enables them to increase their awareness of their identity. The cultural probe kit can be beneficial to gather qualitative data based on participants' self-documentation, allowing them time and space to complete the task on their own. This style of research is especially useful when working with neurodiverse children who have individual learning, working and expression styles. An arts/design-based approach can be used in both the data collection and data analysis of a research project (Burge et al. 2016)

This project used a probe kit to engage children in an emancipatory paradigm that was explored through the expression of a t-shirt design. This approach encouraged the idea of surprise and "breaking through habitual ways of seeing, thinking and acting" (Burge et al., 2016, p. 731). As the research guide, I encouraged participants to think about the research questions in the hope of exploring "unexpected juxtapositions … leading to insights and deep reflection." (Burge et al., 2016, p. 731).

This method – using an arts/design-based activity guided through a probe kit – supports an emancipatory approach as it provided the "capacity for immediacy and accessibility and for giving voice to subjugated perspectives." (Burge et al., 2016, p. 731). Additionally, integrating art into this research project was based on recommendations from Eiserman (2017), who explored arts education and understanding with gifted children in a school setting to address their unique needs. The method supports Dabrowski's Theory of Positive Overexcitabilities (cited in Eiserman et al. 2017), where arts activities allow gifted children to channel their overexcitabilities into "positive avenues of enquiry" (Eiserman et al. 2017, p.208).

Unlike traditional participatory action research, where the entire design of a study is co-created between participants and researchers (Creswell 2018), the cultural probe kit is designed by the primary researcher and includes objects or materials to assist the participant in collecting data about their lives. In this project, the participatory action occurred in the design and making of the t-shirts and the self-creation of data through this arts/design-based method (Sanders and Stappers 2014; Burge et al. 2016; Eiserman et al. 2017; Kassan et al. 2020).

Process

Connecting with the community

At the start of this research project, I contacted two charity partners – Potential Plus UK and the University of Glasgow's Scottish Network for Able Pupils. Initially, I received a response from Potential Plus UK that my email had been passed onto the Chief Executive. Unfortunately, after unanswered follow-up emails, I could not collaborate with Potential Plus UK for this project.

I also reached out to the Scottish Network for Able Pupils (SNAP) and received positive feedback and interest. Unfortunately, some of my emails landed in their spam folder. Attempts to connect with the SANP contact after their annual leave were unsuccessful.

After some unsuccessful attempts at finding a charity partner, I also attempted to contact the National Association of Gifted Children ([no date]) and the US charity The Davidson Institute for Talent Development (2022) without any success.

Finally, I reached out to British Mensa (2022) using their online contact form and received an encouraging reply. I included the idea of a t-shirt design probe kit in my message to them. They said that the project sounded "very interesting" and connect me with Lyn Kendall, a "psychologist who regularly assesses children and is a former G&T/SEND teacher." Mensa's reply was an exciting development in my outreach process. The completed form and full reply can be read in Appendix B: Correspondence with Mensa.

I contacted Lyn, we set up a phone call, and she sent me a copy of her book. Lyn helped this project by giving advice and asked for a poster to share with her parents' group to find participants. She approved the poster (as shown in Appendix C: Poster for Facebook Group) and shared it with her group, where six people responded. Those who reached out to Lyn were instructed to contact me directly. Out of this first group of six people, two parents reached out to me directly.

I finalized the probe kit and sent photographs and digital files to Lyn for her feedback and review. She gave positive feedback and asked if the additional details could be shared with her parents' group as they had questions. I agreed with this suggestion as I thought it may encourage more members to get in touch for a kit. (Unfortunately, no further potential participants came forward.)

Developing the probe kit and research questions

I had originally posed the question, "what is it like to be 2e?". Working closely with Lyn, she suggested there is a risk in asking children such a blunt question, as gifted children often answer questions of that nature with "I don't know, I am just me." (Interestingly, she discusses this phenomenon in her book: "*A Brilliant IQ: Gift or Challenge?*"(Kendall and Allcock 2020)). Lyn suggested a better approach would be to ask more probative and thought-provoking questions, allowing for varied and individualized expression of responses.

While developing the probe kit and design questions, I also sought to create a task that would feel safe to 2e/DME children. Baum et al. (2014) recommend three overarching guidelines for creating programs where 2e/DME students feel safe, including: (1) collecting data in a purposeful way "to gain knowledge of students' strengths, interests, and talents," (2) addressing deficits in context "so students can apply and transfer skills in authentic ways" and (3) understanding children's uniqueness rather than "insistence on measuring them by grade-level expectations." (Baum et al. 2014, p.323). Baum's study promotes the use of a "Multiperspectives Process Model" (2014, p.311) (which considers the whole child, both their gifted ability and other exceptionalities simultaneously) with a positive perspective and direct attention to their personal interests and talents. This strategy is a holistic way of assisting 2e/DME students through their learning experiences (Ronksley-Pavia 2015, p.324).

Combining insights from existing literature with the advice from Lyn's professional experience (and her book) with 2e/DME students, I developed the overall kit concept and research questions. The central concept was to provoke children to reflect on their strengths, their community, and their coping mechanisms. I wantedto ensure the children felt empowered, celebrated, and supported, rather than simply asked what they need help with (which is can easily be the question they are approached with, and they may not be equipped to answer). I also considered how to translate these complex concepts into an activity suitable for a broad age group of 6 to 16 year-olds.

Inspired by Coloured Fish Product's awareness t-shirts, as well as Dyslexia Scotland's "Dyslexia is my Superpower" campaign, I asked the children to decorate a t-shirt with their "superpower" on the front, their "superteam" on the back, and their "defence system" on the armband.

The final probe kit included (see also; Appendix D: Kit Photographs):

- Instruction Sheet
- Consent Form
- Activity Guide
- Designer Statement Cards
- White T-Shirt
- White Armband
- Fabric Markers
- Neon Fabric Paint
- Glow Pen
- Metallic Markers
- Transfer Paper
- Crystal Stickers (2E)

The crystal stickers and transfer paper allowed the children to use some collage, so they did not need to feel 'artistic' to complete the project. Additionally, the selection of arts and crafts materials were intended to give children choices in how they expressed themselves. For some time, I considered the addition of a tie-dye kit to offer creative alternatives away from the basic white of the t-shirt. However, the size constraints of the bottles I decided not to include this option.

To dig deeper into the participants' design processes, I included Designer Statement Cards in the probe kit. These cards gave the children the opportunity to explain their designs as an artist might using words, sentences, or even imagery (as thought bubbles were provided.) Minimal instructions were given where possible to allow the children the space to explain their design ideas in the way they felt best suited to.

The children were reminded there were no right or wrong answers and they were not required to use all the kits contents. Specifically, they were asked to "Use the supplies you like in this kit to design your personalized t-shirt & armband following the Activity Guide." (See Appendix E: Kit Instructions). The activity guide provided design direction and questions for the children to reflect on, as shown in Appendix F: Activity Guide and Designer Statement Cards. It was important to ensure the children knew they had a choice in the creative process, as "choice making can increase student motivation and independence." (Murawski and Scott 2017, p.23) particularly when working with exceptional learners.

They were encouraged to return their kits by being told they would be displayed on the '2e Hall of Fame'.

Table of Contents

Developing the kit visuals for children's enjoyment

The children needed to be engaged with the kit and that there was no perceived stigma surrounding the activity or participating in the activity.

I explored the practical options of sending the kit via Royal Mail as either a Small Parcel or a Large Letter. The Large Letter option was more economical and allowed for the kits to fit through a letterbox, but they are significantly thinner and smaller than a 'Small Parcel,' so this was a concern. I purchased a standard white box to send the kit in as a practical option and created two different box designs using the laser cutter. The laser-cut design of a 'large letter' appeared the most likely to be exciting to children. It was also compact and kept the kit contents secure.

I worked through graphics options for the exterior of the box as I wanted children to be excited to receive the parcels. The graphic design elements of triangles and vibrant colours used in the poster and kit cards were carried onto the box to resemble a traditional style letter envelope. The final design included the 2e & Me project title over the front of the box in various fonts to represent the uniqueness of the children in the 2e/DME community. (Images 1 & 2)

More photographs and information on the design process of the kit is available here: https://www.francescadare.com/packaging-kit-design/

Online supplemental information

I created a research introduction page and linked it to the initial poster, allowing parents to learn more about the project before coming forward. I also create a participant page to give parents access to digital copies of everything that was in the kit and a link to the 2e Hall of Fame. Copies of these pages can be seen at: https://www.francescadare.com/research/crp/#additionalpages

Further details and information on this project and the process can be found at: https://www.francescadare.com/research/crp/#work

Results and Interpretation

Of the three kits sent out to participants, two returned kits were partially completed, and one kit was not returned. Participant 1 submission can be seen in *Appendix G: Participant 1 Response Photographs* and Participant 2 in *Appendix I: Participant 2 Response Photographs*.

Participant 1: Sparrow

Sparrow (not their real name) was a 10-year-old formally identified as gifted with ASD (Autism Spectrum Disorder) and ADHD (Attention Deficit Hyperactive Disorder). They were the first to complete a portion of the kit and send in. Their parent emailed in to say that "He [Sparrow] made a mistake at the back and he got really upset and refused to carry on" (Appendix H). It can be common for 2e/DME children to struggle with perfectionism, performance anxiety (Stornelli et al. 2009; Guignard et al. 2012; Baum et al. 2014; Baldwin et al. 2019) and "overexcitability" (Eiserman et al. 2017, p.200). It is understood that "individuals with overexcitability perceive the world not only in different, but also in more intense and multifaceted ways than others; they are much more prone than others to experience surprise and puzzlement at events in their daily lives." (Eiserman et al. 2017, p.200).

Even when 2e/DME children are interested in the task, or capable of completing it, they can sometimes become too overwhelmed to continue. Sparrow could also be suffering from "internalizing negative experiences" (Ronksley-Pavia et al. 2019b) resulting in anxiety and the inability to participate in activities they enjoy (Ronksley-Pavia et al. 2019b). Children with 2e/DME also "sometimes appear immature by using anger, crying, and withdrawal to express feelings and to deal with difficulties" (Baldwin et al. 2019, p.220), which could be the case here given Sparrow's age and identification.

Sparrow's parent reported that "Sparrow really enjoyed creating his design, he planned it and loved the art materials." (Appendix H). There is some grey literature that children with autism take comfort in organising their things (Comeau 2016), but there is little supporting academic evidence for this. Planning could be a learned technique that Sparrow enjoys and associates with positive outcomes and could be a way of minimising uncertainty in the task ahead, or to try and minimise 'mistakes'.

Some literature suggests that people with ASD are poor planners (Olde Dubbelink and Geurts 2017), but according to Baldwin et al. 2e/DME children are "often unwilling to take risks with regard to academics or areas of deficit" (Baldwin et al. 2019, p.220), so this could be a demonstration of being risk averse, or one of his "independently developed compensatory skills" (Baldwin et al. 2019, p.220).

As seen in Appendix G, Sparrow completed the front of the 2-shirt, and the corresponding designer statement card (Appendix G, Image 1 & 2).

The Designer Statement Card submitted reads: "There's a brain, a cricket bat, maths, circles, physics equations, chemistry test tube and 3 flags of the countries Im from".

As 2e/DME is a neurodiversity, it is interesting to see a brain depicted (with 2E placed on top) in Sparrow's design. It seems fitting to say that his unique brain and way of being in the world is a superpower, as superpowers are depicted in comics as something that differentiates the character. The large multi-coloured cross-style shape could be drawing on classic superhero costume imagery in popular culture. Just like superman has a large S in the centre of his chest, the brain is in the centre of the chest and the cross-style shape, which is likely an indication of the importance that Sparrow places on this aspect. Sparrow also includes imagery that expresses his own cultural background (which makes him unique) as well as academic interests and possible strengths. The design is well planned and shows good visual symmetry – likely as a result of Sparrow's pre-planning.

A week later, Sparrow completed the armband and corresponding designer statement card (Appendix G, Image 3). It was encouraging to see that Sparrow returned to the activity, but not surprising that he did not re-approach the back of the t-shirt, which is where he had already 'made a mistake'. Gifted children's criteria for success is typically higher than their peers (Stornelli et al. 2009) which could be the case here as Sparrow was formally

identified as 2e/DME (Gifted with ASD and ADHD). His participation provided valuable insights into his lived experiences. If this activity was performed in-person as part of a workshop, then a better understanding would have been possible, and Sparrow may have been able to complete the project with peer support. His Designer Statement Card reads: "The book is an encyclobedia next to this is a computer these things help me to calm down." (Appendix G, Image 3).

You can see that encyclopaedia is incorrectly spelt but given his age and the difficulty of the word, this might not be connected to his exceptionalities. English and writing did not make it on the front of the shirt, alongside maths and science. Perhaps Sparrow struggles in these areas, and he may use computers as supportive tools. It is interesting to see an encyclopaedia mentioned as they are not as popular as they once were, but it understandable that Sparrow may enjoy the tactile nature of the books (Sfrisi et al., 2017).

Table of Contents

Participant 2: Starling

Starling (not their real name) was an 8-year-old and self-identified as gifted with ASD, ADHD, and OCD. Their submission included only the 'My Defence' portion of the kit – the parent had indicated in earlier emails that they had been quite busy. Given Starling's age and exceptionalities, it could have been difficult to keep their attention regardless of the activity. This could be the case given the 'My Defence' portion was the smallest area to design.

Sparrow's 'My Defence' Designer Statement Card reads: "I drew a book cricket, staying away from people, play with my baby sister, go on ipads, draw stuff and running around." (Appendix I, Image 3). The images of the armband (Appendix I, Image 1 & 2) are slightly difficult to see but there is evidence of multiple colours and shapes.

Compared to Sparrow's response, Starling's defence items are more varied and include social regulation. It is possible given Sparrow's younger age and lack of formal identification that their coping mechanisms are more experimental. They will not likely be receiving supplemental support in school, and so will be relying on compensating techniques. Often 2e/DME children will experience a shift —described as 'hitting a wall' (Baldwin et al. 2019, p.218) — at around ages 11-12 years old when they move further in education, as they are no longer able to "fake" their abilities using compensating techniques (Baldwin et al. 2019).

Starling indicated that their favourite subject was maths (although what they are best at) and they need the most help with literacy. No assistance was noted on the card. Starling's parent took the photograph and submitted it on Starling's behalf.

Participant 3: Crow

Crow (not their real name) was a 10-year-old formally identified as gifted with a specific learning disability (SLD).

Crow's parent/adult asked for extra time to complete but after follow-ups did not complete the task or offer explanation or additional information.

Conclusion and Recommendations

General & practical limitations

While probe kits have several positives, there are some limitations. Compared to a workshop where the researcher can supervise participants, a probe kit removes the ability to view the creative process. In this project, the limitations of a probe kit were weighed against the benefits of including participants from across the country and allowing neurodiverse children the space and comfort to have an enjoyable experience as participatory researchers.

Probe kits are particularly difficult to ensure the results are returned to the researcher. In this project six people initially expressed interest in participating (or having their child participate). Of the first six respondents, three participants shared their postal address to have a kit sent out, and two partial responses were returned.

The nature of this qualitative research and the small sample side mean the results can not be generalised across all contexts. The intentions are to provide an in-depth understanding of these 2e/DME's children's lived experiences and perspectives and empower them to participate in self-reflection and expression.

Conducting this research by workshop may have resulted in higher completion rates compared to using probe kits by mail. Probe kits were selected to remove the issue of travel and location and in theory open the pool of potential participants. Unfortunately, it proved difficult to obtain postal addresses and then to receive the kit responses back.

Probe kits also limit the amount of interaction with participants. In this project I was unable to watch the designs being completed and ask probative questions. Additionally, conducting this study as a workshop may also provide insights into peer support and the participants may have been better able to complete the designs with outside support.

Lived experiences of 2e/DME children

This research supports the idea that the lived experiences of 2e/DME children are unique. They show traits of both gifted and their other 'exceptionality' identities. It is evident they enjoy sharing about themselves and have interests both inside and out of school. Beyond all else, like Ronskley says, they are first and foremost children (Ronksley-Pavia 2015), with their own personalities, interests, and experiences. The best way to better understand them, and in turn help, is to continue to ask about their lives and experiences, listen and learn from them.

Further research

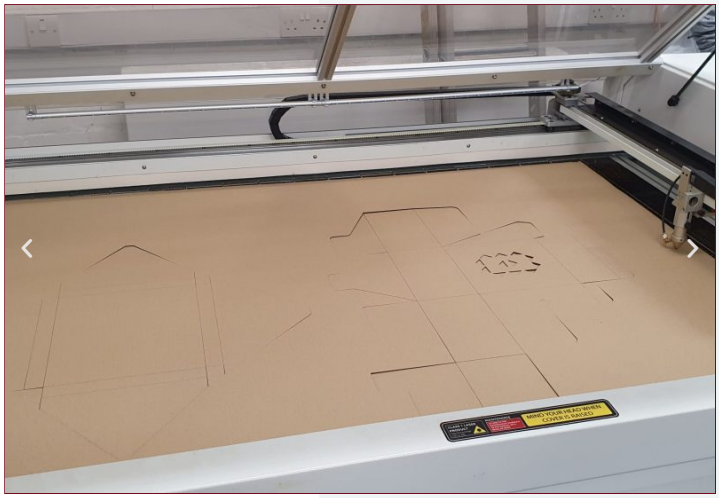
Even though the 2e/DME community is small, further research is this area is still needed. It is not a well-recognised identity (Robertson et al., 2011) and children can often be overlooked, with their learning difficulties overshadowing their gifted traits or vice-versa (Foley-Nicpon et al., 2013). As Baldwin et al. (2019, p.218) states, "twice-exceptional students must have a comprehensive, individualized, flexible plan that addresses the whole child." More understanding and awareness of 2e/DME children will help them develop their strengths and overcome their weaknesses.

Table of Contents

Received Images

Click on the slider arrows to scroll through photographs received from participants.

Participant 1: My Superpower



Additional Images

Click on the slider arrows to scroll through photographs taken during this project.

References

Baldwin, L., Omdal, S.N. and Pereles, D. 2019. Beyond Stereotypes: Understanding, Recognizing, and Working With Twice-Exceptional Learners. *Teaching Exceptional Children* . doi: 10.1177/0040059915569361.

Baum, S.M., Schader, R.M. and Hébert, T.P. 2014. Through a Different Lens: Reflecting on a Strengths-Based, Talent-Focused Approach for Twice-Exceptional Learners. *Gifted Child Quarterly* 58(4). doi: 10.1177/0016986214547632.

Beckmann, E. and Minnaert, A. 2018. Non-cognitive characteristics of gifted students with learning disabilities: An in-depth systematic review. *Frontiers in Psychology* 9(APR). doi: 10.3389/fpsyg.2018.00504.

Blesch, A. 2012. *Sternberg's Triarchic Theory of Intelligence*. [Online]
Available at: https://www.researchgate.net/publication/342918703_Sternberg's_Triarchic_Theory_of_Intelligence
[Accessed: 11 April 2022].

Bornstein, M.H. and Gardner, H. 1986. Frames of Mind: The Theory of Multiple Intelligences. *Journal of Aesthetic Education* 20(2). doi: 10.2307/3332707.

British Mensa Ltd 2022. *Mensa: Contact Us*. [Online]
Available at: https://www.mensa.org.uk/contact-us
[Accessed: 11 April 2022].

Brody, L.E. and Mills, C.J. 1997. Gifted Children with Learning Disabilities: A Review of the Issues. *Journal of Learning Disabilities* 30(3), pp. 282–296. doi: 10.1177/002221949703000304.

Burge, A., Godinho, M.G., Knottenbelt, M. and Loads, D. 2016. '… But we are academics!' a reflection on using arts-based research activities with university colleagues. *Teaching in Higher Education* 21(6), pp. 730–737. doi: 10.1080/13562517.2016.1184139.

Business Research Methodology [no date]. *Positivism Research Philosophy.* [Online]
Available at: https://research-methodology.net/research-philosophy/positivism/
[Accessed: 11 April 2022].

Comeau, E.T. 2016. *Autism: 5 Things You Should Know About Children With ASD.*

Creswell, J.W. 2018. *Qualitative inquiry & research design : choosing among five approaches.* Fourth edition / … Poth, C. N. ed. Los Angeles: SAGE.

Davidson Institute 2022. The Davidson Institute for Talent Development: What We Do. [Online]
Available at: https://www.davidsongifted.org/about-us/what-we-do/
[Accessed: 11 April 2022].

Eiserman, J., Lai, H. and Rushton, C. 2017. Drawing out understanding: Arts-based learning and gifted children. *Gifted Education International* 33(3). doi: 10.1177/0261429415576992.

Foley-Nicpon, M., Assouline, S.G. and Colangelo, N. 2013. Twice-Exceptional Learners: Who Needs to Know What? *Gifted Child Quarterly* 57(3), pp. 169–180. doi: 10.1177/0016986213490021.

Gagné, F. 2008. *Building gifts into talents : Brief overview of the DMGT 2.0.*

gov.uk 2021. *Academic Year 2020/21: Schools, pupils and their characteristics.* [Online]
Available at: https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics
[Accessed: 24 May 2022].

Guignard, J.-H., Jacquet, A.-Y. and Lubart, T.I. 2012. Perfectionism and Anxiety: A Paradox in Intellectual Giftedness? *PloS one* 7(7), pp. e41043–e41043. doi: 10.1371/journal.pone.0041043.

Haines, M.E. 2017. *Opening the doors of possibility for gifted/high-ability children with learning difficulties: preliminary assessment strategies for primary school teachers.* Doctor of Education, University of New England.

Hawker, L. 2021. Dual and multiple exceptionalities: what you must know. *tes magazine* 6 December. [Online]
Available at: https://www.tes.com/magazine/teaching-learning/general/dual-and-multiple-exceptionalities-what-you-must-know
[Accessed: 24 May 2022].

Kassan, A. et al. 2020. Becoming new together: making meaning with newcomers through an arts-based ethnographic research design. *Qualitative Research in Psychology* 17(2). doi: 10.1080/14780887.2018.1442769.

Kellett, M., Forrest (aged ten), R., Dent (aged ten), N. and Ward (aged ten), S. 2004. "Just teach us the skills please, we'll do the rest": empowering ten-year-olds as active researchers. *Children & society* 18(5), pp. 329–343. doi: 10.1002/chi.807.

Kendall, L. and Allcock, C. 2020. *A Brilliant IQ: Gift or Challenge?* Brilliant Publications.

Lucinda 2016. *Why Being British Stopped Me Finding Help For My Twice-Exceptional Child.* [Online]
Available at: http://www.laughlovelearn.co.uk/2016/04/18/british-twice-exceptional-child
[Accessed: 11 April 2022].

Made By Dyslexia and Y&R London 2018. *Dyslexic Sperm Bank.* [Online]
Available at: https://www.dandad.org/awards/professional/2018/experiential/26537/dyslexic-sperm-bank/#:~:text=Dyslexic%20Sperm%20Bank%20%7C%20Y%26R%20London,Out%2Dof%2DHome%20%7C%20D%26AD
[Accessed: 11 April 2022].

Mcpherson, M. 2015. *Labelling in Special Education. (Advantages and Disadvantages).* [Online]
Available at: https://medium.com/@22Committed/labelling-in-special-education-advantages-and-disadvantages-55f7c6201170
[Accessed: 11 April 2022].

Murawski, W.W. and Scott, K.L. 2017. *What Really Works with Exceptional Learners.*

mygov.scot 2021. *The PVG scheme.* [Online]
Available at: https://www.mygov.scot/pvg-scheme#:~:text=The%20Protecting%20Vulnerable%20Groups%20(PVG,work'%20with%20these%20vulnerable%20groups.
[Accessed: 21 May 2022].

National Association for Gifted Children [no date]. *About NAGC.* [Online]
Available at: https://www.nagc.org/about-nagc
[Accessed: 11 April 2022].

Noel, L.-A. 2016. Promoting an emancipatory research paradigm in Design Education and Practice. In: *Future Focused Thinking – DRS International Conference.* [Online]
Available at: https://dl.designresearchsociety.org/cgi/viewcontent.cgi?article=1408&context=drs-conference-papers
[Accessed: 11 April 2022].

Olde Dubbelink, L.M.E. and Geurts, H.M. 2017. Planning Skills in Autism Spectrum Disorder Across the Lifespan: A Meta-analysis and Meta-regression. *Journal of Autism and Developmental Disorders* 47(4), pp. 1148–1165. doi: 10.1007/s10803-016-3013-0.

Potential Plus UK 2020. *Dual or Multiple Exceptionality.* [Online]
Available at: https://www.potentialplusuk.org/index.php/families/dual-or-multiple-exceptionality/
[Accessed: 11 April 2022].

Robertson, S.G., Pfeiffer, S.I. and Taylor, N. 2011. Serving the gifted: A national survey of school psychologists. *Psychology in the Schools* 48(8), pp. 786–799. doi: 10.1002/pits.20590.

Ronksley-Pavia, M. 2015. A model of twice-exceptionality: Explaining and defining the apparent paradoxical combination of disability and giftedness in childhood. *Journal for the Education of the Gifted* 38(3), pp. 318–340. doi: 10.1177/0162353215592499.

Ronksley-Pavia, M., Grootenboer, P. and Pendergast, D. 2019a. Bullying and the Unique Experiences of Twice Exceptional Learners: Student Perspective Narratives. *Gifted Child Today* 42(1). doi: 10.1177/1076217518804856.

Ronksley-Pavia, M., Grootenboer, P. and Pendergast, D. 2019b. Privileging the Voices of Twice-Exceptional Children: An Exploration of Lived Experiences and Stigma Narratives*. *Journal for the Education of the Gifted* 42(1). doi: 10.1177/0162353218816384.

Sanders, E.B.-N. and Stappers, P.J. 2014. Probes, toolkits and prototypes: three approaches to making in codesigning. *CoDesign* 10(1), pp. 5–14. doi: 10.1080/15710882.2014.888183.

Stornelli, D., Flett, G.L. and Hewitt, P.L. 2009. Perfectionism, Achievement, and Affect in Children: A Comparison of Students From Gifted, Arts, and Regular Programs. *Canadian journal of school psychology* 24(4), pp. 267–283. doi: 10.1177/0829573509342392.

The Good Schools Guide [no date]. *Dual or multiple exceptionality (DME)*. [Online]
Available at: https://www.goodschoolsguide.co.uk/special-educational-needs/types-of-sen/dme
[Accessed: 11 April 2022].

University of Glasgow [no date]. *Scottish Network for Able Pupils: About Us*. [Online]
Available at: https://www.gla.ac.uk/research/az/ablepupils/aboutsnap/
[Accessed: 11 April 2022].

Yewchuk, C.R. and Bibby, M.A. 1989. The Handicapped Gifted Child: Problems of Identification and Programming. *Canadian Journal of Education / Revue canadienne de l'éducation* 14(1), pp. 102–108. doi: 10.2307/1495205.

iii Table of Contents

Project PDF

Download Project PDF

Copyright © 2022 Francesca Dare