

In press, *International Journal of Research & Method in Education*, author accepted version 4th
March 2026

Using body mapping within a participatory methodology to enable autistic girls to share their experiences of education: considerations for social justice, embodied awareness, and knowledge production

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Declarations of interest: The authors report there are no competing interests to declare.

Acknowledgements: We thank everyone who participated in the project for generosity with their time and trusting us in sharing their views and experiences.

Funding: This project was funded by a Doctoral studentship from the UK's Economic and Social Research Council awarded to the first author (Reference 2273038).

Data availability statement:

The data from the pilot study are openly available in the University of Southampton's eprints repository at [doi:10.5258/SOTON/D3016](https://doi.org/10.5258/SOTON/D3016) reference number 488800.

Due to the ethical and sensitive nature of the research, supporting data from the Fizzacc study is not available.

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Abstract

Body mapping is an arts-based method designed to foreground how people feel rather than what they think. Body mapping can support the surfacing of often unheard or otherwise inaccessible or suppressed experiences because meaning making is non-spoken as well as spoken. For marginalised groups, where power imbalances between the researchers and the researched may be considerable, body mapping is argued to be one way in which participants can contribute on their own terms. Autistic people report distinctive embodied subjectivities of the world, often due to sensory differences. Body mapping may be a method that is well suited to exploring these embodied subjectivities with autistic young people whose experiences tend to be marginalised or overlooked. Most body mapping research has focused on health-related topics with very little application in education or with autistic young people. This paper reports on the use of body mapping to explore school and transition experiences with 11 neurodivergent young people in the UK: 8 girls and 3 boys aged 11-17 years, nine with autism diagnoses. We evaluate our application of body mapping according to its potential for (1) exploring embodied awareness (2) enabling social justice and (3) supporting knowledge production and translation.

Introduction

The neurodiversity paradigm prioritises the lived experiences of autistic people as a major lever for improving understanding and acceptance and galvanising positive social change (e.g. Chown et al., 2017; Welch et al., 2021). This directly challenges post-positivist research approaches which are typically based on the quantification and measurement of the so-called deficits of autistic people (Milton & Bracher, 2013). Many decades of autism research, including within education, have positioned autistic people, especially children, as objects of study within researcher-led agendas (Waltz, 2007), with very limited engagement with autistic people themselves or the practitioners who support them (Guldberg et al., 2021). Traditionally, research has predominantly focused on addressing the challenges and difficulties experienced by autistic young people and positioned such difficulties as residing within the person i.e. a medical model approach to understanding disabilities and needs (Milton, 2014).

There has been growing awareness of the ethical, moral and epistemological injustices that underpin these pathologizing approaches within autism research (e.g. see Waltz, 2007; Chown et al., 2017; Catala et al., 2021). Proponents of the neurodiversity paradigm have called for greater involvement of autistic people within research, including setting research agendas, leading and conducting research, and prioritising strengths-based approaches informed by direct lived experiences (Fletcher-Watson et al., 2018; Milton, 2014; Pellicano & den Houting, 2022; Parsons et al., 2020). Aligned within these calls have been efforts to diversify research methods to enable autistic participants to share their experiences in ways that recognise their diversity of communication, cognitive and support needs. For example, Carroll and Twomey's (2021) scoping review of methods used with neurodivergent children and young people reported that visual approaches were helpful including stories, drawing, painting and use of pictorial symbols. They highlighted that a 'conversational style' (p. 720) based on a structured task and coupled with visual prompts and activities seemed to work well overall in supporting children to share their views.

However, a substantial challenge for educational research and practice lies with ensuring that a range of young people's views are enabled and heard in ways that avoid tokenism (Lundy, 2007). Several systematic and comprehensive reviews on research including autistic young people's views (e.g. Fayette & Bond, 2018; Tyrrell & Woods, 2018; Tesfaye et al., 2019) conclude that the main methods applied are traditional interviews and surveys, and that the findings mostly include the voices of those 'who were able to verbally report their experiences' (DePape & Lindsay, 2016, p.69). This bias is indicative of a wider problem within the autism research field where the voices of people with co-occurring intellectual disabilities, or those who may be 'unvoiced or differently voiced' (Ashby, 2010, n.p.n.), are systematically and routinely excluded (Russell et al., 2019). Aiming to search specifically for approaches that were more inclusive of these voices within education research, Lewis-Dagnell et al.'s (2023) systematic review found some examples of creative methods and materials being applied including digital storytelling, photographs and videos, Talking Mats, stickers and objects. Talking Mats were originally developed by Murphy (1998) and are a communication tool that supports children and adults to share their views and preferences. Picture symbols representing topics, options and emotions are used in laminated form on a large piece of paper / card or material, and users are encouraged to place topics and options cards below an emotion symbol to show how they feel e.g. putting a picture symbol of shopping under a 'happy' emotion symbol. In this way, a range of preferences, choices and emotions can be shared that do not rely on spoken communication. The completed Mat can be photographed and shared as a record of the discussion (see Cameron & Murphy, 2002 for a worked example). One of the key findings from Lewis-Dagnell et al., (2023) was that a toolbox of methods is needed to be able to accommodate a diverse range of voices and communication needs and preferences. However, they also concluded that 'far more needs to be done to enable the voices of this frequently marginalised group to be meaningfully heard within research and practice' (p.14).

Within education, the voices of autistic children and young people are critical for informing and improving inclusive educational practices. Autistic children and young people are being let down by the education system in the UK with delays in provision of support, and placements not meeting needs

(National Autistic Society, 2023). This has led to autistic young people being overrepresented in the increasing numbers of pupils struggling to attend school (Totsika et al., 2020) and experiencing ‘extreme emotional distress before/during/after school’ (Connolly et al., 2023, p.1). Autistic girls are of particular concern within this context, with their experiences increasingly highlighted as challenging due to late or misdiagnoses and their needs not being met (Sproston et al., 2018), often over long periods of time (Moyses, 2021), which can lead to the masking of difficulties, anxiety, and exhaustion (Halsall et al., 2023).

Consequently, it is vital to gain a better understanding of what may be challenging at school and to learn from the perspectives of autistic young people, especially girls, about what can be done to make it better. From an inclusive perspective, young people’s experiences should be appropriately heard to understand both the challenges and the opportunities for change and improvement (Goodall, 2020). Hearing from young people directly is central to the guiding principles of good autism practice in education (Guldberg et al., 2019) and to promoting epistemic justice in research (Catala et al., 2021) such that autistic young people’s capacity as agentic knowers about their own lives is appropriately recognised and valued (Parsons & Kovshoff, 2025).

This paper therefore contributes to building a methods toolbox by focusing on work that explored the use of body mapping as a creative research method for enabling autistic young people to share their views about their educational experiences. We first introduce the body mapping method before summarising the project and illustrating how we applied body mapping within it.

Body mapping as a creative research method

Body Mapping is a multi-modal arts-based method that has its origins in the study of sexual health, to discover how women in Jamaica understood their reproductive physiology (MacCormack & Draper, 1987). It has since been used in a variety of settings, often influenced by a practical guide produced by Solomon (2007) who explored the experiences of women living with HIV/AIDS in Tanzania. Body mapping typically involves drawing around the body on a large sheet of paper. Images, symbols, collage, objects,

and/or words are then added to the image to represent elements of the participants' experiences, and this can take place over several hours or sessions over several weeks. Participants are encouraged to consider their choice of colours and materials to represent feelings and to consider where they place the elements on the map. Accordingly, the creation of body maps is a very flexible and individualised process, enabling participants to use a range of arts-based techniques in any way that makes sense to them. The decisions made during the creation of the body maps can then be discussed verbally or by the development of a written commentary, which is sometimes called a 'testimonio' (Gastaldo et al., 2018, n.p.n).

By enabling participants to consider the nature and placement of words or images in relation to their bodies on the map, they are encouraged to consider their embodied experiences. In this way, the creation of body maps supports a reduced reliance on spoken language and expression (Dew & Smith, 2025), thereby enabling 'different forms of expression' (Britton et al, 2020, p.11) and 'thinking in non-standard ways' (Bagnoli, 2009), over which participants have choice and control (Barnes et al., 2024). Accordingly, body mapping has been referred to as 'nonverbal storytelling' (Dew et al., 2018, n.p.n) with body maps acting as 'a proxy for the child's embodied experience' (Barnes et al., 2024, p.1564) or as 'large real objects which come to "stand in" for a participant's relationship with the world' (Dew & Smith, 2025; n.p.n).

Through enabling the creation of representations of relationships with, and feelings about, the world body mapping is anchored within phenomenological theoretical accounts of experience such as Heidegger and Merleau-Ponty. These accounts actively eschew the Cartesian dualism that locates knowledge about the world as residing in the mind and instead recognise the interconnectedness of mind and body as being central to knowledge, experience and understanding of 'being in the world' (Heidegger's 'In-der-Welt-sein') (Boldsen, 2018; Frankel et al., 2024). Accordingly, an individual's knowledge of the world is accepted as coming from being inherently and physically embedded within it and as being inseparable from it. In other words, bodily or embodied knowing is 'subjective in nature'

which 'shape[s] and effects[s] the individual's way of experiencing and engaging with the world' (Boldsen, 2018, p.896).

The importance of autistic bodies and embodied experiences

This phenomenological stance is notably in contrast to the dominant theoretical accounts of autism which emphasize cognitive and perceptual processing, and which are typified by accounts of autistic difficulties such as 'Theory of Mind' and 'Weak Central Coherence' (Rajendran & Mitchell, 2007).

Instead, within phenomenological accounts, embodied subjectivity is recognised as central to understanding how it feels to be an autistic person in the world (Boldsen, 2018; Welch et al., 2021; de Jaegher, 2013). Such an understanding is even more critical when evidence from the lived experiences of autistic people is considered. Specifically, sensory experiences of environments are regularly reported as impacting negatively on experiences at school including crowded spaces, lighting, heating, smells, and uncomfortable uniforms (Gray et al., 2023). Sensory experiences can also be intensely pleasant too, but this can come with challenges in being able to disconnect from them and self-regulate (Sibeoni et al., 2022). Thus, embodied methods are potentially important in research with autistic people for enabling greater phenomenological insights.

Shaughnessey (2022) provided an example of incorporating drama-based embodied methods to explore the identities and experiences of autistic girls within a specialist school setting. Her approach combined movement, music, and improvisation which she called the 'labyrinth'. She reported how profoundly the sensory environment impacted on the girls' experiences and how important it was for the labyrinth to help them '...to filter adverse or invasive sensory elements such as bright light, loud or high-pitched sounds, bright colours or patterns, and strong smells' (p.140). She concluded that embodied methods enable '...different communication styles and preferences [that are] mindful of [neurodivergent] community and cultural codes so that communication doesn't necessitate one group conforming to the norms of another' (Shaughnessey, 2022, p.144). In other words, embodied methods can enable autistic

children and young people to share their experiences in different ways which align with their different ways of experiencing, understanding and communicating about the world.

Accordingly, body mapping may be well placed as a powerful method especially for autistic children and young people to reflect on, represent, and share their embodied subjectivities of school environments, and as an alternative or augmentation to the more immersive, physical and placed-based approach that Shaughnessey (2022) describes. Indeed, Murray et al., (2023, p.892) argued that body mapping may offer potentially distinctive affordances in prioritising the body in accounts of lived experiences in a way that other methods cannot do:

Contrary to other arts-based research methods, body mapping centralises the body for meaning-making, encouraging embodied reflection to explore physical, emotional and social experiences holistically.

Given these putative affordances, it may be surprising that the use of body mapping in autism research generally, and education research more specifically, is very scarce. Most research that applies body mapping has been conducted in health-related spheres and topics according to literature reviews (de Jager et al., 2016; Gastaldo et al., 2018; Murray et al., 2023). Many projects involve children and young people but are not focused on, or do not specify the inclusion of, autistic participants. In education, body mapping has been applied to explore teacher identities and reflective practice (e.g. Botha, 2017; Maddamsetti, 2023) but its use with children is more limited.

Barnes et al., (2024) is a rare example in which body mapping was used to explore the lived experiences of racism of 90 children aged 10-11 years in Primary schools in England. Children were placed into pairs and drew around each other's body while lying on large pieces of paper on the floor. They were then encouraged to recall their experiences of racism and annotate these on the space outside their body outline on the paper, and then to consider how these experiences made them feel, which were drawn or written inside the body outline. Using coloured pens, children were encouraged to '...use images, words, symbols, emojis, colour coding and any other graphic variations they might come up with to notate their

experiences, feelings and perspectives' (p.1564). Barnes et al., (2024) found body mapping to be a powerful and effective way to enable children to express 'previously hidden experiences' (p.1569) on this sensitive topic through providing a more 'democratic' (p.1560) and 'dialogical' (p.1562) space in which children could participate on their own terms and make their own decisions. Interestingly, the research team reported that the body mapping process first enabled the children to have a 'conversation with themselves' which then made 'it easier to speak to the researchers' (p.1568). In other words, children spent time thinking about their emotions and how to create their maps without first needing to explain their decisions.

We could only find one published study that has applied body mapping specifically with autistic young people. Britton et al., (2020) used body mapping to evaluate surfing as a therapeutic process with a group of autistic young people in Ireland. Seven girls and five boys aged 8 to 17 years participated in an 8-week surf programme and completed body mapping exercises before, during, and following the programme. In the first session, body maps were drawn on the sand while the second session invited participants to colour in pre-printed body outlines on A4 paper. The final session involved the creation of a group body map, also created on the sand. Britton et al., (2020) reported the power of body mapping for enabling insights into the therapeutic benefits of surfing as well as supporting rapport, communication, and group cohesion. In line with Barnes et al., (2024) they noticed that the act of colouring the paper body maps 'allowed individuals to quietly reflect and become absorbed' (p.8). Overall, Britton et al., (2020, p.11) commented that the maps supported these young people to reflect and represent their embodied experiences of surfing:

Emotions felt in the body were richly described and reflected upon, with findings highlighting an inclusive and creative approach that supports diverse forms of expression, engaging multiple senses and facilitating greater self-awareness and engagement.

This positive experience suggests there is much more to be explored about the potential of body mapping as a method for autistic young people. Indeed, de Jager et al.'s (2016) systematic review of the

body mapping literature noted the promise of body mapping and that more research was needed in this area. Additionally, they summarised three main attributes of body mapping which could make ‘it uniquely suited to particular research projects’ (n.p.n); namely its potential for enabling (1) social justice; (2) embodied awareness; and (3) knowledge production and translation. These attributes persuaded us that body mapping could provide opportunities to support the sharing of the embodied experiences of autistic young people, potentially allowing a greater depth of exploration of their school experiences. We therefore used this framework as our analytical lens for reflecting on the strengths and challenges of using body mapping with autistic young people. We next briefly introduce the project and the participants before explaining de Jager et al.’s (2016) attributes more fully and applying and discussing them in relation to our own data.

The purpose, overall design and participants of the project

This paper draws on the Doctoral research of the first author, which included a pilot study and a main phase of data collection within a participatory design process (East, 2024). The thesis sought to explore the educational experiences of neurodivergent, mainly autistic, young people with the aim of co-producing resources with them that could then be used in schools to promote awareness and greater understanding of experiences and needs. Overarching research questions (East, 2024) explored the experiences of, and barriers to, successful school transitions for autistic girls, as well as the challenges and benefits of including autistic girls in participatory research, however these are not the focus of this paper. Instead, this paper focuses on addressing the third main research question: How can creative data collection and analysis methods be used to promote the voices of autistic girls? This was split down into sub-questions that form the basis for this paper:

- In what ways can body mapping be used to support children to share their thoughts and ideas around the issues of transitions?
- What are the advantages and limitations of body mapping as a method for enabling the voices of children?

The study first piloted a body mapping method, both online and in-person, just before and during the COVID-19 pandemic to explore experiences of school transitions. Five neurodivergent young people between the ages of 11-16, two girls and three boys, participated between September 2020 and January 2021 (three with autism diagnoses and two with other neurodivergent conditions). A group of autistic girls then participated over several months to share and document their experiences of schools and educational transitions via body mapping and use those experiences to co-produce resources that were shared with schools. This participatory design group comprised six autistic girls aged 13-17 years, four of whom were attending mainstream secondary schools and two were attending a Further Education college. The group was called Fizzacc (formed from the first letters of their real names; note that pseudonyms are used below) and the resources are freely available on our website (ACoRNS, 2024). We draw examples from across the pilot and main studies to provide a critical reflection and evaluation of body mapping as a research method with these young people using de Jager et al.'s (2016) three attributes as our analytical frame.

Ethics

Ethical approval was obtained from the University of Southampton's Faculty of Environmental and Life Sciences Ethics Committee (Ref # 61698 and 64210). Consent was provided by parents for children to participate, and assent was sought and received from the young people. This process included permission for the use of images of the body maps and for quotations from the interviews. All data was anonymised, and pseudonyms are used below. Any identifying features on the body maps were covered before being shared, hence why some images in the Figures below are cropped or zoomed in. Physical body maps were retained by the participants who completed the task on paper. A link to the digital body map was emailed to the researcher at the end of the session. All digital data were stored on a password-protected computer and digital recordings were erased once data transcription was complete.

Summary of methods and procedures

In-person body mapping pilot (pre-pandemic): Two participants completed the body mapping tasks in person, in one session. Both participants requested their parent stayed in the room throughout.

Participants were introduced to the resources available, including large pieces of paper and a range of craft materials (see Figure 1) and told they could choose which resources to use and how. The first task involved drawing around the outline of the child's body on the paper and was completed with help from the parent. They could then choose to annotate or embellish the map in any way they chose during the session, which was structured around a series of prompts that encouraged them to think about home and school and transitions to a new school or college (Table 1). Sessions lasted 50 minutes and 1 hour 21 minutes.

*** Add Figure 1 and Table 1 about here***

Online body mapping pilot (during the pandemic): Three participants completed the body mapping tasks online, over two sessions. In the first session, participants practised using the Autodraw software to draw a body outline including trousers, a T-shirt or jumper, and a face. Autodraw (Motzenbecker & Phillips, 2017) is easily accessible on the internet and does not require any specialist equipment. It has an artificial intelligence element that allows it to guess what you are trying to draw. This means that if you struggle with drawing online you can choose from a series of offered images to make your drawing clearer (see Figure 2). This feature supported the young people who found it more difficult to draw using a mouse or a trackpad on the computer to create relevant images. This meeting took approximately 30 minutes.

*** Add Figure 2 about here***

During the second session, participants completed the same tasks as for the in-person session (Table 1). One participant requested his parent stay and support him with the tasks, and the others opted to work without parental support. Sessions ranged between 37 minutes and 1 hour 26 minutes, with one participant completing theirs at a third session (at their request). All meetings were recorded within MS

Teams. Once participants had completed their body maps, they were asked to reflect on their experiences and preferences of doing the body mapping task.

Participatory design group (Fizzacc): Due to practical uncertainties about in-person meetings during this time, these sessions were conducted online. An initial familiarisation meeting was arranged online with each group member to find out about their communication preferences so that the content and structure of the group meetings could be planned accordingly. Ten one-hour weekly group meetings were then held. The time and day for the group meetings was discussed during familiarisation meetings with a preference expressed to meet later in the evening so they had time to relax after school or college. The group members chose how to engage with the discussion during meetings: three kept cameras turned on most of the time and contributed through speaking. Of the three with cameras off, one communicated via the chat only and two combined spoken input and written chat.

Body mapping tasks were planned for seven of the ten meetings with the expectation that tasks and order could change. The sequence of the tasks was similar to the pilot study with some small adjustments (Table 1). Each session began with a discussion on the theme of the body mapping task. Conversational prompts were open to allow the group to direct discussion towards the issues they felt strongly about. The body mapping task for the session was then introduced and group members moved away from their screens to complete the tasks. The researcher remained onscreen and available to answer any questions they had. Group members then shared what had been included on the body maps and why, allowing reflection in a timely manner. This involved showing the image they had been working on and / or giving a spoken or typed description of it. They were then asked to either email their images to the researcher or to add them to a group Padlet. Group members were also invited to provide a written description of their image if they wished. Word constraints preclude inclusion of the full details of the Fizzacc methodology but more information is available from the first author's thesis (East, 2024).

Examples of body mapping attributes in action

Social justice

de Jager's (2016) attribute of social justice is characterised by the body mapping process being therapeutic or beneficial whereby participants are encouraged to share their perspectives and reclaim or rebalance their own experiences in the context of otherwise dominant (usually negative) narratives. Frankel et al., (2024, p.9) referred to this benefit as enabling participants to 'speak back' to dominant medical paradigms in their research on patients' experiences of organ transplants. Similarly, Barnes et al., (2024, p.1560) suggested body mapping was a more 'democratic' approach compared to other qualitative methods. Dew and Smith (2025) further argued that the therapeutic benefits include enhancing self-worth, self-efficacy, resilience and optimism. There is, therefore, a putative therapeutic benefit to the person in claiming their own space for their own story. In a similar way in autism research, body mapping may help autistic young people to 'speak back' to a dominant narrative that has often overlooked, undermined or undervalued their views and experiences.

In the pilot study, a particular area of insight was shown in an awareness of the children's individual strengths and challenges, for example Malia's love of playing music which she explained was supported at school. Her map, created online (Figure 3), shows musical notes and a treble clef as well as a music book and the word 'conductors' on her chest. Matteo described some difficult interactions with peers which he had managed to overcome through making new friendships after transitioning to a new school. His map, also created online (Figure 4), shows his difficult emotions relating to those past experiences in his head, while also showing the names of staff and peers who had supported him. All pilot participants reflected on strategies they used when feeling challenged by difficult situations, including spending time with pets, reading, or places they may go to such as their bedroom or to a room at school where they felt comfortable and supported. These examples show how the body mapping task, both online and in-person, created a safe space that enabled these young people to talk about transitions, some of which had been experienced as challenging.

Insert Figures 3 and 4 about here

In Fizzacc online sessions, there were several examples where the girls shared their stories of difficulties and received empathy and understanding from the group. Nancy's image (Figure 5) shows how she felt separated from the other children at Primary school and that she needed to choose between being herself and trying to fit in. These were experiences that the rest of the group identified with as they were aware of the efforts they frequently made in hiding their autism throughout school. Thus, being able to share this experience was therapeutic for Nancy in the process of creating her map and then sharing it with the group.

Add Figure 5 about here

A similar experience occurred when Abria shared her body map (Figure 6). This shows the contrast between the challenging aspects of school and the positivity from staff members who made a difference. For example, Abria talked about the school nurse who provided support and respite when she needed it. Abria also provided powerful insights into her conflicted feelings about school including how she liked being by herself because this meant 'no argument' but also did not like feeling lonely. Sharing Abria's experiences helped the others to share theirs too, and all group members reflected that there were people in school who helped them, which was a theme that was revisited in later sessions too. For example, the body mapping task for the seventh meeting was to focus on the people or strategies that group members turn to for support, in school, at home, or both. In her image Ola chose to represent things that supported her all the way through from primary school until now (Figure 7).

Insert Figures 6 & 7 about here

In this way, the sharing of difficult as well as positive experiences enabled a reclaiming of nuanced personal perspectives on school which moved past more generalised ideas of school simply being bad or negative or being dismissed or misunderstood by others. Powerfully, Ellery emphasized how important it had been for her to surface and share her experiences, via body mapping, with the group and to reclaim a more positive identity of herself, in line with de Jager's (2016) conceptualisation of social justice. This is further evidenced when, in Week 4 of Fizzacc activities, the body mapping task was

to create a link between the primary and secondary school images which represented how group members felt about the transition. Although when Ellery shared her image of a lightning bolt (Figure 8) it made the group laugh, they all related to this feeling during their own transition experiences. In reflecting on this afterwards, Ellery commented:

When I was first told about my autism, I was only shown negatives of the condition and was told that I would live a worse life. I hated myself and my autism but, because of this [Fizzacc] project, I can see both myself and my autism in a happier note.

Insert Figure 8 about here

Embodied awareness

de Jager et al., (2016) suggested that encouraging participants to reflect on their experiences using body mapping enables embodied awareness in ways that other methods that neglect physical or sensory experiences do not do i.e. enabling 'access to information which would otherwise be overlooked or rendered invisible' (n.p.n). This aligns with Bagnoli (2009) who discussed the strengths of visual methods in research more generally, suggesting that such methods 'help us pay attention to reality in different ways' because 'not all knowledge is reducible to language' (pp.547-548). Overall, body mapping is suggested as promoting a focus on how individuals *feel* about situations, people, environments and events and not just how we *think* about them (de Jager et al., 2016). This focus could be especially helpful for autistic young people whose sensory experiences of the world may differ significantly from others, as noted above.

Our observations from the pilot study showed this attribute in action with factors such as choice of materials, chances to reflect, and opportunities to use graphic or written communication rather than just spoken, demonstrating body mapping as an effective method for representing embodied experiences. The richness of the contextual information provided in the body mapping sessions was supported by the addition of images and colours and particularly in the positioning of images and text on

the body map. We observed that participants were able to express layers of meaning with one idea and in a way that may have been more difficult to do in spoken responses to an interview question.

For example, in the pilot study Clive spoke about how he found PE lessons challenging at school because he did not like the competitive aspect. While this was a useful observation, Clive chose to represent this on his online map by drawing a monstrous looking PE teacher next to a drawing of himself running away (Figure 9). This gave a much fuller representation of how he felt about PE lessons than his spoken description alone. It also gave a sense of his embodied experience of wanting to escape from his PE lessons by showing him fleeing from the wicked-looking teacher. This image was placed outside the outline of his body; unlike the image he created of his family which showed him standing between and being embraced by his parents and which was placed next to his heart with a heart shape above to reflect his feelings. This showed how Clive was able to link the images he created to his physical as well as emotional experiences. Indeed, all participants in the pilot study chose to represent the most important features of their contexts and experiences closest to, or within, their body suggesting careful reflection on and representation of the relationships between the elements of their body map.

Insert Figure 9 about here

It might have been that the opportunity for embodied reflection was diminished in the online version of the task compared to in-person, but there were no clear differences that we observed in the way the pilot participants responded. Both online and in-person sessions saw participants placing home, family and support closer to their bodies and school and college further away. For example, Malia talking about college, said: 'I want to put it further away from my body, because I'm not quite there yet'. She contrasted this with home: 'It's a spacious area in the body and I've lived here nearly all my life so it might be near my heart.' Both the online and in-person applications of the method involved consideration of head versus heart in placing emotions within the body. The addition of emotional representation in specific places added to this. For example, by showing some emotions being

contained within the head, and some in the stomach, Matteo showed more about the embodied impact of those emotions for him than he was able to do by speaking about them (Figure 4).

The Fizzacc group specifically wanted to explore their sensory experiences within the body maps as the sensory environment in school was reported as challenging by all members. There were many similarities in experiences; one which all agreed on was the aversive sound of fire alarms, as illustrated by Rose (Figure 10). Here the fire alarm is given considerable physical prominence on the map through being constructed in different collage materials such that the fire alarm stood out on the paper and was distinct from the accompanying line drawings.

Insert Figure 10 about here

Knowledge production and translation

The third attribute of body mapping according to de Jager et al., (2016) is knowledge production and translation. This is about recognising the importance of the diversity of voices within methodological approaches which respect different modes of expression, and which move beyond solely 'verbal forms of information gathering' (n.p.n). This attribute enables participants to represent themselves and communicate their stories in a more accessible way because of the range of ways in which meaning can be expressed on the map. Gastaldo et al., (2018, n.p.n) refer to this attribute as 'polyvocality' which enables a 'pluralism of stories' to be told. Given the diversity of communication needs and preferences amongst autistic people, this attribute of body mapping could be particularly relevant and helpful.

This feature of multi-voicedness was evident across the pilot and Fizzac studies through the children's choices of which images to include and where to place them and the ways in which these choices were then described. The diversity of the maps from all the participants is striking and provides an immediate and powerful knowledge translation mechanism demonstrating considerable individuality. Although the balance of power was still with the researcher as she instigated, planned and managed the sessions, our reflections on the experience suggest that body mapping provided a space in which participants could

express agency over what they chose to share and how they shared it. Accordingly, they had some power over which data they provided and how.

For example, although the researcher guided the body mapping process in the pilot study to focus on the topic of transition, it was up to the individual how they realised this focus on their maps. This was clear in the way participants engaged differently with the tasks and how they used different materials to create their maps. In the pilot study, the children who created their body maps on paper were given a wide range of resources to choose from. Clara's finished map was quite abstract with some elements being represented by areas of colour and shapes created from coloured pipe cleaners (Figure 11), but Harry's included precise drawings and words (Figure 12).

Insert Figures 11 & 12 about here

Clara chose to predominantly use paints for her body map as she wanted to create large areas of colour to reflect how she strongly identified colours with people and emotions. In contrast, Harry chose to use felt-tipped pens as he wanted to be more precise with his drawings and include more written elements on his map as he felt more comfortable working in this way. Harry explained this choice also reflected his interest in building and construction which was further represented by a cardboard model of a bird house he had built.

Similar features were apparent in the maps created in the online sessions using Autodraw. Clive drew freehand (Figure 9) while Malia (Figure 3) and Matteo (Figure 4) used the magic pencil function which tidied up drawn images. Malia's body map was densely populated with images while Clive's was less so. Matteo and Malia both included text on their maps while Clive's was solely images. Choice of colour also mattered, for example Matteo explained that he was writing words in red 'because red is an angry colour so it the colour of those feelings'. Likewise, Malia was clear about her choice of colours to show different feelings:

[Grey shows] the uncertainty. And the not knowing. And like the not the not really happy times. I think that that's what grey represents on here. Orange is going to be confusion and blue is going to be good.

These differences in response to the same instructions illustrate the range of creative ways in which children chose to express their meaning and experiences, in line with de Jager's (2016) attribute of knowledge production.

A further benefit of the body mapping method was that in being able to intersperse talking about their experiences with periods of creating images the participants were able to take pause and consider their responses. This was particularly apparent when working on the task with Harry in the pilot study (Figure 12). There were long periods of silence while Harry chose materials or created images on his map. In an interview, these silences may have been uncomfortable, prompting rushed answers, disengagement or unnecessary clarification of the questions, whereas the distraction of the art materials meant that the pauses were a comfortable and necessary part of the map creation process. This was supported in both in-person and online tasks, as both required the young person to make selections of images and ways of realising them.

Likewise, Fizzacc members reflected on the combination of meeting online and working on the physical body maps and were very positive about this. They were excited to have taken delivery of such an enormous parcel of materials and enjoyed having options to complete their maps, as Rosie commented: 'I really loved options!'. The value of having options was reflected in the variety of choices made; some body maps were very abstract with lots of paint used, and some were very precise drawings with marker pens and use of text. Ola's comment emphasizes the importance of these options for enabling the attribute of polyvocality that Gastaldo et al., (2018) describes: 'Having everything out and being able to have a big space to kind of like express myself on to that and how I feel about things.' Examples from the Fizzacc group also show how they included images of activities they enjoyed and colours or shapes they felt represented their personality. In week 1, the body mapping task was to decorate one of the hands on

their maps to represent and introduce themselves and their interests to the group. Rose's example (Figure 13) shows the significant scope available for personal creativity whereby she created a very rich representation of the things that mattered to her within this one part of her map.

Insert Figure 13 about here

Ellery's map from week 5 of Fizzacc activities shows similar richness and a range of expression. The task was for the group to think about where their strength and power comes from, and to create a power symbol to represent that. Power symbols were included to add some positive imagery onto the body maps as many of the school-based images focused on negative experiences. While some group members chose just one image to represent power, Ellery chose several but with a dominant theme of rainbows which had multiple meanings, as she explained (Figure 14).

Insert Figure 14 about here

Nevertheless, there were also times when having too many options was not helpful. Despite having piloted the body mapping methods and providing more time to complete tasks as a result, there were still some challenges for Fizzacc group members in getting tasks finished: 'Some of them [the tasks], there were too many things going on in my brain and I struggled to sort them all out and get them on the paper in the time' (Nancy). For those who did not finish in the allocated meeting time and chose to complete work in their own time, this was also difficult with other priorities to consider: 'It was a bit stressful doing it in the week and doing it my own time' (Rosie).

Discussion

The use of body mapping to explore the experiences of school and transitions with autistic young people makes a novel contribution to the methods literature since this is, to the best of our knowledge, the first study specifically focusing on experiences of education to apply and report on this method with this group. Body mapping was a very powerful way of enabling the typically marginalised voices of autistic young people, mainly girls, to be included and heard within this research. We did not know beforehand how neurodivergent young people would respond to this method, or how it could be

adapted for online use, and so our paper also contributes to the development of online methods catalysed by the COVID-19 pandemic (Nind et al., 2021). Vaughan et al.'s (2022) research on using body mapping online during the pandemic was published contemporaneously with our own data collection and focused on the experiences of 29 adults 'with disability, mental distress and/or refugee background' (p.1). They found that conducting body mapping sessions online '...offers a productive means of collecting rich data, in a manner that can be fun, engaging and psychologically safe for participants' (Vaughan et al., 2022, p.10). Our own experience chimes with this. Encouragingly, participants engaged deeply and fully with the tasks, expressing meaning in a range of creative ways and sharing these with the researcher in the pilot study (online and in person) and with other members of the Fizzacc group in the main study (online only).

de Jager et al.'s (2016) three suggested attributes of body mapping proved to be a very helpful way of analysing and conceptualising our experiences and we found considerable alignment with their observations from the wider literature and their suggested strengths of body mapping as a method. Specifically, we saw how body mapping supported different communication preferences by including data from spoken, written, and graphically represented ideas (knowledge production and translation). Fizzacc members included both drawn and written elements on their body maps as well as using different materials to represent their identities, feelings and experiences. Furthermore, body mapping allowed for consideration of the group members' relationships to their environment and physical reactions to events through consideration of their embodied experiences (embodied awareness). Body mapping also allowed for differences in processing speed (knowledge production). During tasks there was time to consider what to include both before and during the creative process and to return to ideas multiple times during the sessions, which would not have been possible in an interview or discussion situation (Driessnack & Furukawa, 2011). This is an important advantage of using body mapping with autistic participants since differences in information processing are well documented (e.g. Zapparrata et al., 2023). This feature also aligns with observations from others about the benefits of using body

mapping (Barnes et al., 2024; Britton et al., 2020) and embodied drama-based approaches (Shaughnessy, 2022) with young people.

There was also a powerful and enabling to-and-fro in the interactions with the researcher and the wider Fizzacc group through the creation of the maps. Others have referred to this affordance of body mapping as democratic and dialogical (Barnes et al., 2024), and as mitigating power imbalances because participants can shape research processes and collaborate with the researcher in doing so (Klein & Milner, 2019). We also saw this in action. Through being able to spend time alone, quietly working on the maps, before or during the sessions, participants could reflect on how and what they wanted to share. There were extended periods of silence in many cases as participants worked on their maps. They also demonstrated agency in continuing to bring updates to their maps back to the group for sharing and discussion, even though they acknowledged that sometimes the need to complete sections of their maps in between online meetings was challenging. In this way, the young people showed continuing commitment to the project and, crucially, their ongoing consent for participation. In reflecting on their use of body mapping with women involved in digital sex work, Linell and Abdelhady (2025, p.1) refer to this ongoing, dialogical engagement as 'embodied oscillative ethics' whereby boundaries for participation, on the participants' own terms, are continuously negotiated through revisiting body maps, and discussion about these, over several sessions. This idea aligns with de Jaegher's (2013, p.1) theory of 'participatory sense-making' in autism in which she argues that in social interactions, meaning is created not only by the participants' response to the researchers, but also in the processes and rhythms of interaction with each other. In this way, social interactions involve participating in the sense-making of one another, and body mapping seemed to support an inclusive and safe rhythm of engagement that was led by the young people.

The beneficial, therapeutic attribute of body mapping (social justice) was especially apparent within the sustained data collection over 3 months within the Fizzacc group. Despite their individuality, the group members realised that they had many of the same experiences in school. Many of the most powerful

moments during meetings involved recognition of these shared experiences which were accompanied at times with a palpable sense of relief and wonder at the similarities. Such shared experiences supported the development of a group identity for Fizzacc and created bonds between the members, which provided a safe and trusting space in which further views and experiences could be surfaced. This strongly aligns with the experiences that Britton et al., (2020) reported with their group of autistic young surfers, where the process of body mapping supported group trust and cohesion. Similarly, Fizzacc group members created a more balanced narrative from their experiences that ‘spoke back’ (Frankel et al., 2024) to the otherwise dominant, usually negative, narratives about them. The richness of these narratives about their school experiences further enabled an inclusive and creative approach within the analysis of the findings. Specifically, narrative inquiry was used to ensure that the girls’ voices were prioritised and embedded in the analysis process, and to avoid the first author’s voice dominating the interpretation as a neurotypical, adult researcher. This led to the development of novel ‘perspective narratives’ that used fictionalised characters to represent a shared set of experiences that the girls reported on and through their body mapping. The current paper focuses on methods rather than findings, but more details of the analysis can be found in East et al., (2024).

Reflections on the process

Body mapping is a newer and less familiar method (to us), and so we also wanted to briefly reflect on our experiences of applying the method in this study. We found it fascinating and rewarding to witness the autonomy that body mapping allowed for the young people, which meant that they chose very different materials to add to the maps, ways of expressing themselves, and ways of navigating placing images or words on the body. There was a strong sense that the method enabled individualised expression and engagement, which we think was rewarding for the young people and beneficial for supporting their sustained participation. Any preconceived ideas we may have had about how an individual might approach the tasks were very quickly proved wrong. Body mapping is a process which requires researchers to relinquish a lot of control and be prepared to adapt to the way individuals want to work. While the sharing of more power is an essential condition within participatory research, the

tensions and risks of doing so, especially within Doctoral research (e.g. Drake, 2010; Freitas, 2026) are well recognised. Nevertheless, being prepared to offer flexibility and follow the child's lead is an important feature of inclusive methodologies that support children to participate in research on their own terms (e.g. Scott-Barrett et al., 2023).

Challenges and limitations

As with many participatory research projects, there were some compromises that had to be made in the way the work with Fizzacc was realised. The decision to use body mapping was made prior to commencing the project, which prevented Fizzacc members from being involved in the choice of method. The age and inexperience (of research methods) of the group members meant that making informed decisions about methods would have used too much of our limited time together. While it would have been ideal to allow Fizzacc members to be active participants in all decision-making (den Houting et al, 2021), it was not possible for this project.

The voices represented in this research were from girls who were able to provide spoken or written contributions to group discussions and so this research is vulnerable to the same criticisms as those cited earlier that focus on a sub-section of the autistic community. Recruitment for the project during the COVID-19 pandemic targeted those able to use video conferencing software via speech or text.

While our application of body mapping illustrates how silence, reflection and non-spoken elements can be powerfully incorporated, this does not remove the need for a level of sharing and explanation of images that relies on spoken or written communication. Thus, while our work has value and adds to our understanding of how the views of autistic young people can be sensitively and creatively gathered, it does not address the balance of autism research under-representing autistic people who do not speak or write, or have more complex communication needs (Bradbury Jones et al., 2018; Lewis-Dagnell et al., 2023). It does, however, add body mapping to the toolbox of possible options for including autistic young people in research, with the powerful imperative to continue to explore the range of ways in which it could be adapted to enable the expression of a wider range of views.

Conclusion

The individual attributes of body mapping identified by de Jager (2016) and reflected in our own study are not unique to body mapping. They share the common affordances of visual methods more generally in supporting participants to engage with their experiences, thoughts and feelings in different ways and to share these in ways that are not solely dependent on speaking (Bagnoli, 2009). For example, the advantages of Photovoice for communicating ideas (Carnahan, 2006; Ha & Whittaker, 2016; Povee et al., 2014) and collage for flexibility of responses (Delafield-Butt et al., 2021; Ridout, 2014) are well recognised and were incorporated into the body mapping process. However, we suggest that the *combination* of features in body mapping, as illustrated above, led to a particular richness, individuality and authenticity with which participants expressed their identities, feelings and embodied experiences. Accordingly, we suggest that body mapping may be particularly well suited to exploring embodied subjectivities with at least some autistic young people.

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Table 1 Sequence of Body Mapping Tasks for Pilot and Main Studies

Task sequence	Activities for pilot study	Activities for Fizzacc sessions (main study) – note that the task sequence denotes the number of sessions i.e. 10 weekly sessions
1	Draw round the outline of your body.	Draw the outline of the body– consider colour and texture of the line. Prepare an introduction of yourself for the group.
2	Choose a colour to go around the outline of your body so it stands out. Think carefully about which colour you choose. You might choose more than one colour. Whatever you choose should represent something about you.	Design one hand to reflect something about yourself – interests, character, preferences etc.
3	Now it is time to decorate your hands. Fill the spaces where your hands are with images and colours that represent you. They might be drawn or images that you cut out and stick on. If the hands didn't come out very well in your outline you can draw them again.	Represent primary school on the body map. Think about where to place the image as well as what to include.
4	Choose a place on your map where you would like to represent your home. It could be inside your body or outside. Think about why you might put your home in this particular place. Decide how you would like to show your home. Maybe you would like to include some of your favourite things about being at home on your image.	Represent secondary school on the body map. What might the placement of this in comparison to the placement of primary school suggest?
5	Your school is going to go onto your body map next. Think about where you would like to put it. You can choose how you would like to show your school. (This could be primary or secondary school depending on the context)	Represent the primary to secondary transition on the body map. Find a way to link the schools which represents how that transition went for you. Think about the choice of colours, line style and resources.

6	Once you have finished your school image, you need to find a way to connect it with home. You might use straight lines or wiggly ones or something other than lines. Think about what your choice might say about how you feel when you go to school in the morning and when you come home again in the afternoon.	Create a power symbol. Where does your power come from? What images represent your power and where on the map will you place it to show the source of your power?
7	Now it is time to think about your new school/college/classroom/situation. Think about what you know about your school so far. This could be to do with the subjects you are taking, the differences between school and college or the way you feel when you think about the move. Choose an image to represent this on your map.	Represent what/who supports you with difficult times at school or elsewhere.
8	How will you connect home to your new school/college? Will it be the same as the connection between home and school? It is up to you to choose how you would like to show the connection.	Finishing off any elements that are incomplete.
9	Think about what helps you when you are finding things tricky. This might be intense interests, gadgets, or activities. Find a way to represent these on your body map.	Finishing off any elements that are incomplete.
10	Think about the people around you who support you. Choose who you would like to include on your body map and where you would like to place them. You can choose as many people as you like. You might like to draw people or to write their names. Think about the colours or patterns you choose for the different people you include. How do these colours or patterns represent them?	Represent the sensory impact of the school environment.

Figures and captions



Figure 1 Craft materials supplied in addition to large paper for the body maps

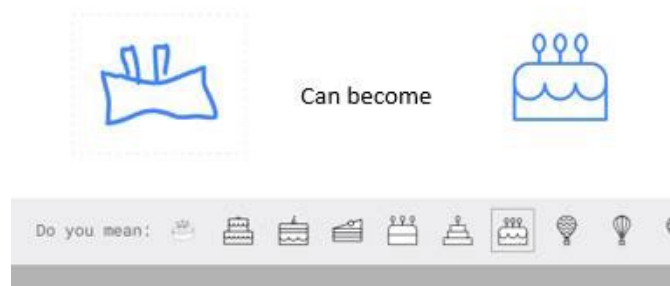
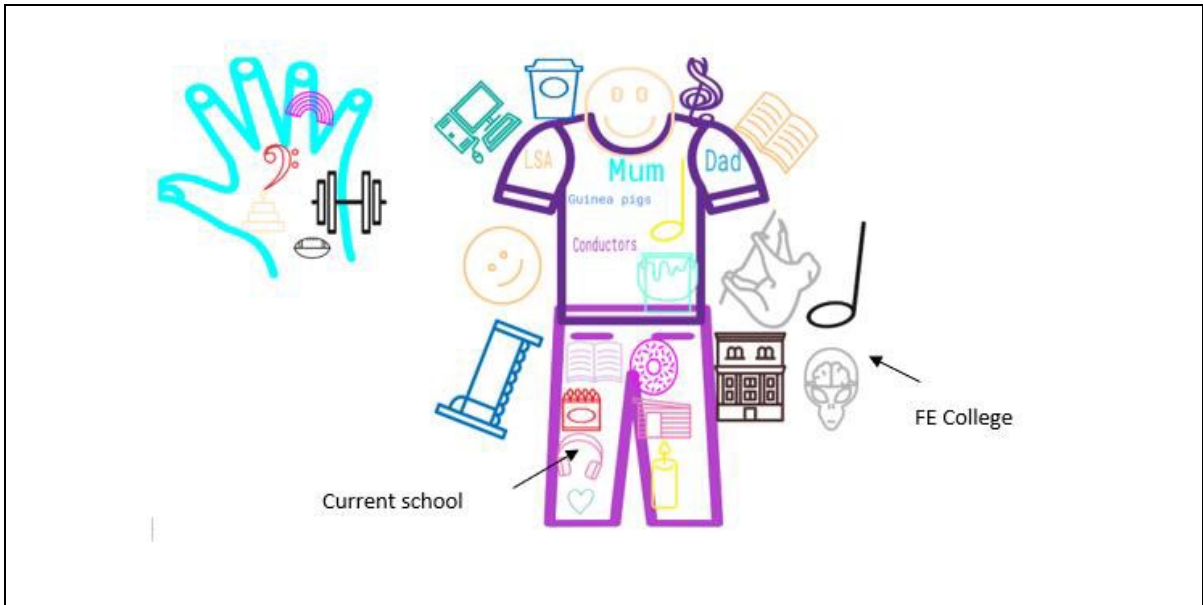
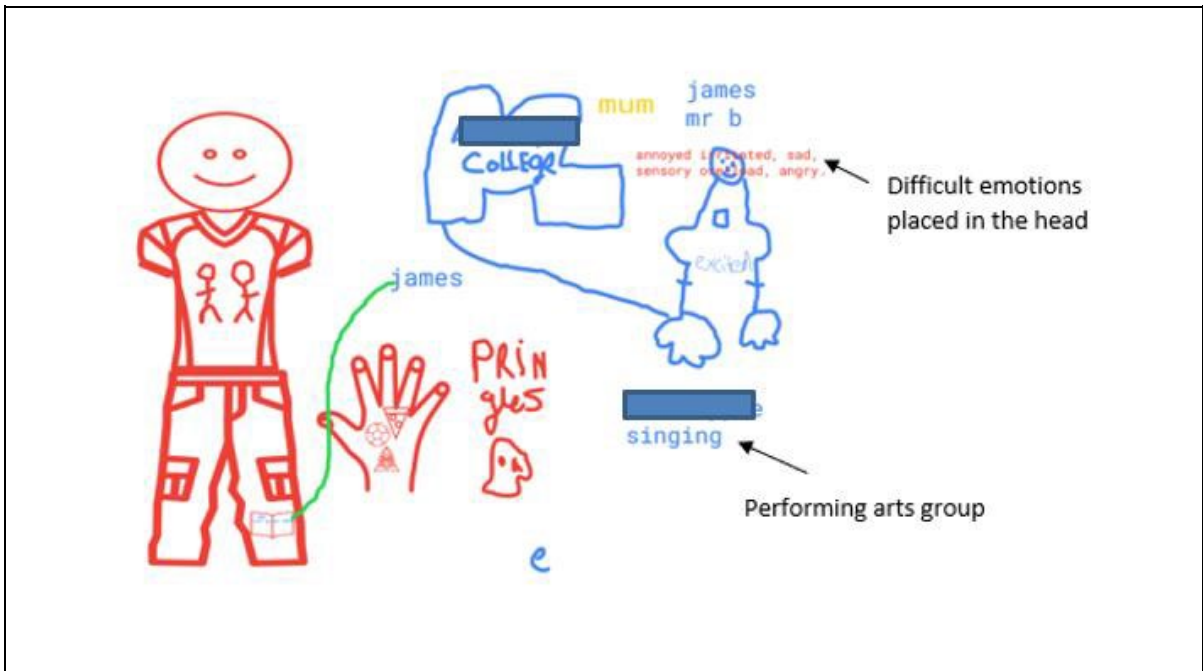


Figure 2 Screenshot showing how Autodraw changes a digital drawing into a digital picture



There is the outline of a figure in purple in the centre and an outline of a hand in turquoise to the left. Images inside these outlines include musical notes, headphones, and books. The word 'Mum' is in the centre of the chest and 'Conductors' lower down. Images representing FE college are in black and grey. Images representing current school and home are in a variety of bright colours.

Figure 3 Malia's body map (online pilot)



A figure and hand outlined in red are on the left of the image along with images of a football, pizza, and the word 'pringles'. A figure on the right in blue has red lettering on the head describing negative emotions such as 'annoyed' and 'sad'. 'Mum', 'James', and 'Mr B' are written at the top. Mum is written in yellow – the only use of colour other than red and blue.

Figure 4 Matteo's body map (online pilot)



In the bottom right-hand corner is a stick figure with a sad face. Surrounding are words including 'loner', 'nerd', 'naughty' and 'why can't you talk?'. Above this is a confused face with question marks choosing between two sides of a wiggly line. One side says 'fit in and lose my sparkle', the other 'stand out for being me'.

"And watching all the other kids playing and thinking I'm on a planet of aliens. I don't understand what they're doing. I'm going to have to try and figure it out so I can fit in and pretend like I'm one of them."

Figure 5 Nancy's body map and testimonio from week 2 (Fizzacc)

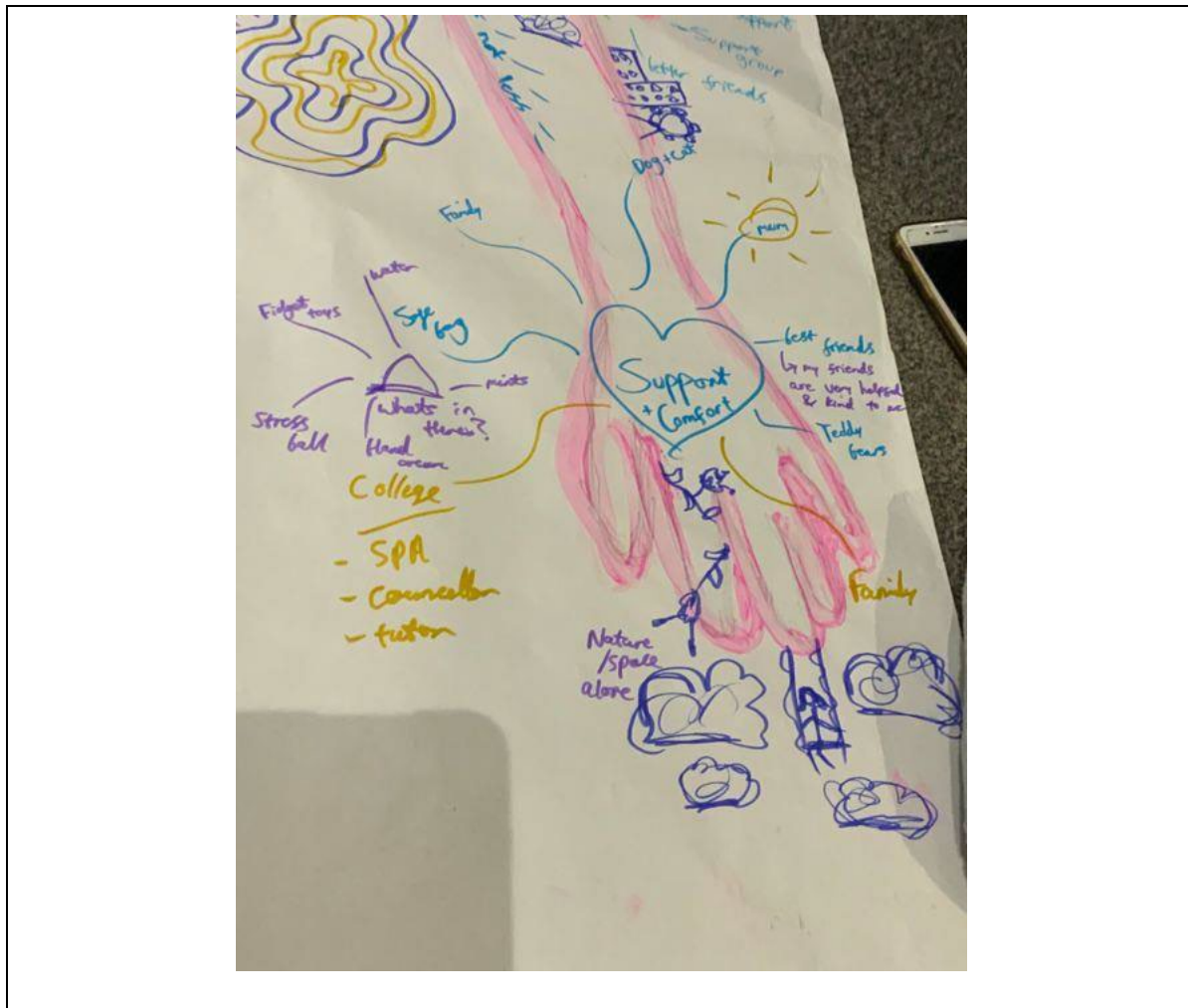


This image shows a side view of a hand and wrist with a broken bracelet on it. Above the hand is a dark cloud. Eyes surrounded by a dark jagged circle show one side crying. Perched on the fingers is a yellow bird with the words 'cute' and 'sparkle' in pink.

"The random dark colour of cloud is just a blob of my feelings the eyes surrounded by black are halved with one eye crying and the other one not to represent how I'm alone most of the time because I like it being alone no argument no sound just me but I also don't because it is lonely. The baby bird is because I spend both my break times in the nurse's office and she is really nice and her name is XXX and the stickers are what she gave me when I had a panic attack a few weeks ago. The bracelet that is open and would fall is like a broken friendship"

bracelet. The weird black red lines are like my attention moving to my hand when I stab my nails into my hand. So mostly bad in school but there are positives.”

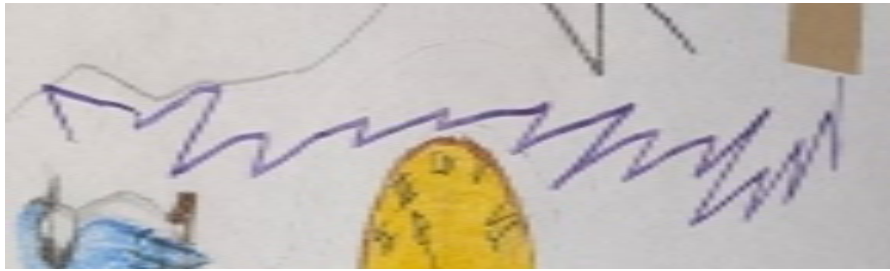
Figure 6 Abria's body map and testimonio from week 3 (Fizzacc)



This image shows a hand and wrist with a pink painted outline. There is a blue heart on the hand with the words 'support' and 'comfort'. From this are lines linking words such as college, Mum and family.

“I used to have things that are a comfort for me, like I'd have my teddy bears with me at all times and stuff like that. And I think there would be like some people that would like not be so nice about it and make fun of it and I think they weren't very good at dealing with that”

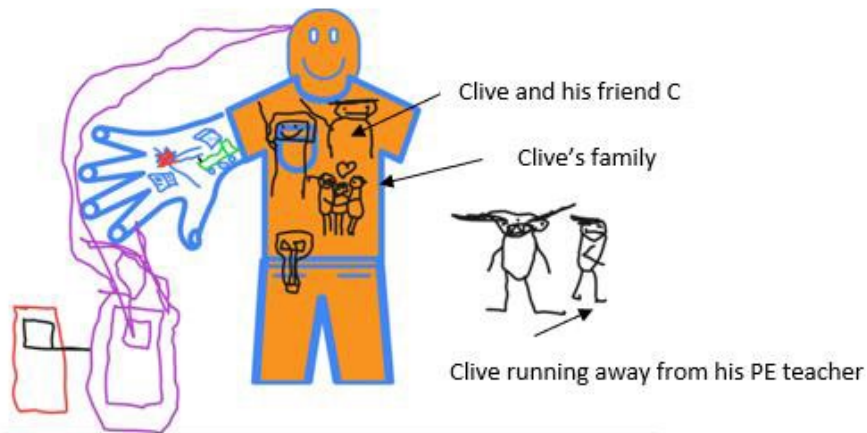
Figure 7 Ola's body map and testimonio from week 7 on who or what gives support (Fizzacc)



A purple jagged line runs down the centre of the image. There is a blue bird at the top and part of a yellow clock face halfway down.

"I have drawn this as a lightning bolt as it was not a nice experience and just made me go AHHHHHHHHHHHHHHHHHHH!"

Figure 8 Ellery's transition from primary to secondary school discussed in Week 4 (Fizzacc)



An outline of a body is in blue with orange shading. On the chest is an image of two figures smiling and below, three figures embracing. On the right of the body is the figure of someone running from a monstrous-looking figure.

Figure 9 Clive's body map (online pilot)



This is a red circle with a rough texture, created from collaged materials. There are yellow lines that radiate outwards from the circle, made from fabric stuck onto the paper.

“Sensory impact. I’ve drawn a fire alarm because I don’t like the fire alarm going off at school.”

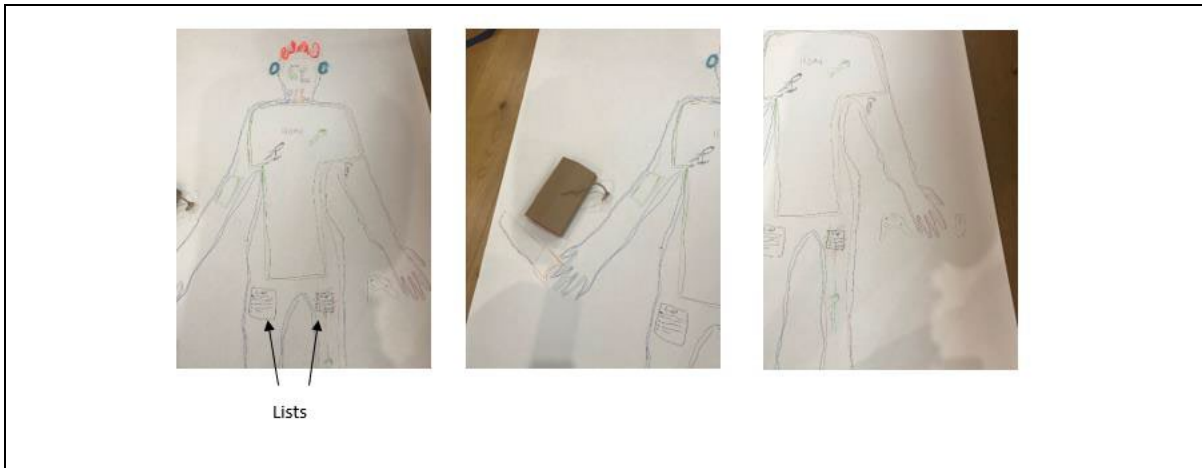
Figure 10 Sensory experiences by Rose in week 10 (Fizzacc)



Link between home and primary

An outline of a body is painted in green. Small images can be seen on the hand and face. There is pink paint on one of the legs. Pipe cleaners are stuck on the leg and face.

Figure 11 Clara's body map (in-person pilot)



The image of a body has orange pipe cleaners for hair. There is a brown rectangular object next to the hand on the left which represents a bird house. A game controller is drawn next to the hand on the right. There are representations of lists drawn on the thigh.

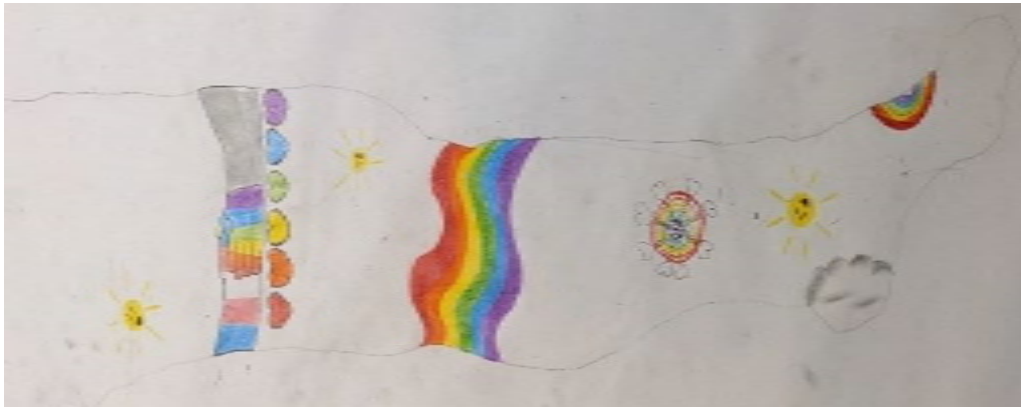
Figure 12 Harry's body map (in person pilot)



Drawing of a hand with wavy multicoloured edges. Inside the shape of the hand are lots of drawings including comedy and tragedy masks, a sloth, a rainbow, a bar of chocolate and some faces. Across the wrist is a musical staff and notes.

“I used a squiggly rainbow coloured outline because I love rainbows and I'm energetic. I've added a sloth and a crocodile because they are my favourite animals. I've drawn drama masks as I'm in a drama group and I've drawn musical notes around me and added a musical bracelet because I like singing. There's a pig as I'm Pongo the Pig in our next pantomime. The rabbit is my pet called Coffee. The heart is green and orange as they are my favourite colours. The butterfly is there because butterflies are my favourite insects and they remind me of my Nan. Chocolate is my favourite food. I've added logos from Minecraft, TocaBoca, Roblox and YouTube because these are some of my favourite games. I've drawn a dress and a sewing machine because I would like to be a fashion designer. The two faces are Ruskin from my favourite book, Krindlekrax.”

Figure 5 Rose's hand from week 1 with accompanying testimonio (Fizzacc)



An outline of a leg. At the top is the sun, below are two hands holding one another with a rainbow of hearts underneath. A thicker line of rainbows is under the knee. There is a grey cloud on the heel and more suns and rainbows on the foot.

“Sun – Happy little suns! I love the warmth and love sunny days. Rainbows - because my friends make me happy and so do rainbows, so my brain made a link between the two. Cloud on my heel - Clouds make rain and this makes rainbows. Also, rain means the field outside my house is usually empty of people so I don't have to listen to the noise. Rainbow in a circle - This is because it is connecting with hearts. My circle of friends/love. Handshake rainbow - Most of my friends are in the LGBTQ+ group and we all accept each other. I would be nowhere without my friends :-)”

Figure 6 Ellery's power symbols and testimonio from week 5 (Fizzacc)