

‘When We Were Doing That [Coding Club] . . . I Just Couldn’t Wait for Friday’: Creating Space for Agency and Fun Within School-Based Research and Design

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Abstract

Despite increasing adoption of neurodiversity-informed approaches, the views and capabilities of autistic children and young people are often downplayed in both educational research and practice. Consequently, this study focused on the experiences of autistic and other neurodivergent young people engaging in collaborative research and design within the context

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of a weekly coding club. Within the coding club, students contributed to the co-design of a computer game, while creating digital stories about their experiences. Digital stories are short videos about students' educational experiences, that focus on students' agency and strengths. The two videos presented here offer insights into both the output of collaborative design work and the process of doing it. The first video shows footage of gameplay from the co-designed game, while the second video is an example a digital story, created by two of the students involved in the study. Together, the two videos show the students' agency and the fun they experienced, serving as examples of what is possible when autistic and other neurodivergent students are given the space to choose how they use their strengths to engage with learning activities centred around technology-focused co-production.

Keywords

autism, collaborative design, coproduction, digital stories, neurodiversity, technology

Research context

The videos presented here are two examples of the outputs from a research-practice partnership between the first author, a doctoral researcher at University of Southampton, and Fairmead School, a special school in the South of England. The approach we adopted follows calls to embrace the mutual benefits of greater collaboration between research and practice in education (Parsons, 2021; Parsons and Kovshoff, 2019). Our research was conducted through a Coding Club established by the first (VW) and second (BC) authors. BC was the project partner at Fairmead School who helped to decide the focus of the project. He facilitated the integration of Coding Club as an option during timetabled extra-curricular enrichment activities, which were instigated due to COVID-19 restrictions on school opening and access. The purpose of the Coding Club was to support students to learn about computer programming and the wider technology sector, as well as to provide a context for research about autistic students' experiences of participatory technology design.

Within the wider context of educational technology design, children's involvement has echoed the changing understandings of childhood, specifically the recognition of children as social actors through the conceptual lens of the sociology of childhood (Moran-Ellis, 2010). Accordingly, children's roles in technology design have developed from exclusion, to greater collaboration and influence over technology designs, where children are considered protagonists within the design process (Iversen et al., 2017). Despite this, research relating to autistic children and technology has largely conceptualised technology as a means to address autistic children's perceived deficits (Frauenberger et al., 2019). This limitation reflects prevalent narratives which reduce autistic and other neurodivergent children to a focus on their deficits, which contributes to stigmatisation and poor well-being (Pellicano and den Houting, 2022). Where research has developed technologies *with* autistic children, experiences of the autistic children involved have often been ignored or marginalised by focusing on the *design outputs* (Parsons and Cobb,

2014), or adopting methods centred around the priorities of adult researchers rather than the children themselves (Ward, 2024). We recognise the lack of research and marginalisation of autistic children's perspectives in this area as epistemic injustice, as described by Catala et al. (2021). Consequently, this study aimed to counter the prevalence of deficit-focused narratives about autistic children and address the lack of knowledge about their experiences of participatory technology design.

The study engaged with 14 students aged 13–16 over 26 weeks, to collaboratively develop a computer game, and co-produce research about their experiences using digital stories and reflective interviews (Ward, 2024; Ward et al., 2022). Digital stories are short videos that convey the perspectives and experiences of their author, through images, footage, sounds and text (Lambert, 2009). Digital stories are increasingly used across educational contexts to highlight autistic children and young people's perspectives and strengths (Parsons et al., 2015; Parsons et al., 2020). In line with the neurodiversity movement (den Houting, 2019), digital stories are a strengths-based approach which can position autistic children as capable and agentic knowers (de Jager et al., 2017). This contributes to countering deficit-focused narratives, which characterise autistic children as unable to contribute to knowledge creation (Pellicano and den Houting, 2022). The application of digital stories here represents a methodological innovation, which allowed rich insight into the students' social world and experiences of participatory technology design during Coding Club (Ward, 2024; Ward et al., 2022).

Our research-practice partnership offered a unique opportunity for researchers, students and staff to contribute to the co-construction of knowledge that reflected the priorities and perspectives of autistic young people as social actors, while valuing the knowledge and experience of the professionals who support them (Ward, 2024; Ward et al., 2022). This approach drew heavily on understandings of agency as a dynamic, relational and contextual process (Moosa-Mitha, 2005), which is discussed further below. We use this article to showcase a video of the *design output*, in video 1, alongside one of the digital stories depicting students' *experiences* of creating the output, in video 2. Together they reflect the findings of the study, emphasising the opportunities provided by flexible, strengths-based and collaborative approaches to learning through research and design.

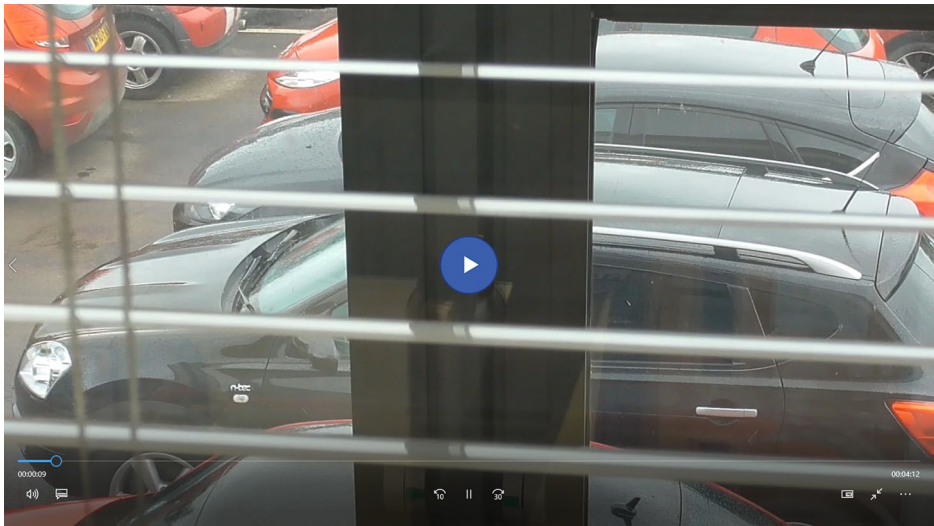
What we made: 'Birds With Guns'

While the study initially sought to support the creation of multiple games, the onset of COVID-19 restrictions and the move to online and hybrid sessions meant that initially separate ideas were combined to form a single game which the whole group worked on together. The final game is a retro-style single-player 2D shooter game, where players act as gun-wielding birds, shooting zombie-birds to earn points and progress through the levels, without losing lives by being caught by the zombie-birds as they move around the screen. The first video shows some real game play from the computer game created within the study, which the students named 'Birds with Guns'.



How we made it: Jay and Terry's digital story

The second video is one of the four digital stories that students co-created (see Ward, 2024; Ward et al., 2022 for the full analysis). Video 2 was co-created by Jay and Terry (pseudonyms), who individually filmed Coding Club sessions, and planned narratives, before working together to review and combine text and video, enhancing it with music, visual effects and animations. Although Video 2 mostly represents Jay and Terry's perspectives on developing 'Birds with Guns', it is important to acknowledge the impact of others on the creation of their digital story. The lead researcher was involved in organising and trimming footage that students filmed, and other school staff also supported students with reflecting on their involvement, planning narratives and editing the final stories. VW also applied filters to blur participants' faces, minimising the likelihood of identification by others. Accordingly, video 2 is the result of co-creation between students, staff and the researcher.



Student agency in research and design

Together, the two videos highlight the importance of flexibility within the study, and how this supported students to practice agency within the context of the Coding Club as a research and design space. Video 1 displays the collaborative result of the 14 students' unique contributions to participatory design including: creating artwork (for players, zombie-birds and the level backdrops), developing game mechanics, and programming the game. Significantly, some students contributed in ways which had not initially been anticipated, using strengths which had previously been unknown even to school staff, for example composing background music and recording in-game narration.

'Birds with Guns' is a testament to their collective efforts, and what was possible when flexibility was provided to support students in practicing agency by choosing how they wished to contribute to participatory design and creating new opportunities for participation, based on their unique strengths. The value of this collective effort was noted by both students and adult participants within reflective interviews at the end of the project (pseudonyms used throughout):

But all of those people that took part, I mean if . . . if . . . if that didn't happen then the-, well the game wouldn't work, would it? (Levi, student co-creator, in Ward, 2024: 121)

. . . it [the game] is something that they came together and created, they've designed it, and I think it's a real reflection of, of their kind of personalities, their creativity, but also their humour. (Scarlet, teacher, in Ward, 2024: 212)

While video 1 shows what the group achieved through collaboration, Jay and Terry's digital story (video 2) highlights their individual talents and contributions. Their

digital story depicts some different ways they and other students contributed, including footage of students engaging in coding, designing artwork, and explaining ideas they had developed. As well as capturing the varied forms of agentic participation within the classroom, their digital story positions themselves as capable knowers, both about their own experiences, and in relation to other skills and expertise depicted (Ward, 2024). The second half of the digital story features Levi, who presents to the camera, interacting with Jay, who explains the meaning of ‘binary’. This section highlights Levi’s strength in performing, mirroring his contribution to the game in providing the voice over narration.

Importantly, the extent of student agency also appeared to have implications for students’ enjoyment and engagement in participatory design (Ward, 2024). Students contributed in ways they liked, evoking fun, rather than obligations to participate in a particular way. This sense of fun was evidenced in the playful character of both the videos presented here, and through students’ reflective interviews:

When we were doing that I really, I just couldn’t wait for Friday. (Jay, student co-creator, in Ward, 2024: 123)

I think it was the best, the best. (Andy, student co-creator, in Ward, 2024: 123)

Jay and Terry’s digital story also emphasised their enjoyment through the enhancement of basic narrative slides and footage with sound effects, animation and music. Together, the two videos highlight the value of education and research experiences centred around autistic students’ strengths and agency. The insights afforded through digital storytelling demonstrates their benefits as a critical, creative and strengths-based methodology for exploring the educational experiences of neurodivergent children and young people.

Procedural and practical ethics

Ethics was fundamental to the approach and rationale for this project. Informed consent was sought from all adult participants, and the parents/guardians of students involved. In line with rights-based approaches to research ethics (Morrow and Richards, 1996) and the focus on student agency within the project, students were also provided with adapted information sheets and a video to support their decision-making with respect to their own participation. This was complemented by a continuous focus on voluntary participation, which can sometimes cause tensions within school-based contexts which commonly feature cultures of compliance (Heath et al., 2007). This study was reviewed and approved by the University of Southampton Education School’s Research Ethics Committee (reference: 54356). Additional permission has been sought from the parents/guardians of the students whose digital story is published here.

Accreditation

While this article highlights the work of Jay and Terry, 'Birds with Guns' is the result of all the student co-creators from Fairmead School who participated.

Authors' note

Further information and details can be found in Ward, V (2021) ACoRNS presents Festival of Social Science event: 'Count me in! Celebrating student contributions to collaborative videos and game design'. Available at: <https://www.southampton.ac.uk/education/news/2021/11/30-acorns-event-at-esrc-festival-of-social-sciences-2021> and https://www.youtube.com/watch?v=Gr4A40JRi_c

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Supplemental material

Supplemental material for this article is available online.

References

- Catala A, Faucher L and Poirier P (2021) Autism, epistemic injustice, and epistemic disablement: A relational account of epistemic agency. *Synthese* 199(3–4): 9013–9039.
- de Jager A, Fogarty A, Tewson A, et al. (2017) Digital storytelling in research: A systematic review. *Qualitative Report* 22(10): 2548–2582.
- den Houting J (2019) Neurodiversity: An insider's perspective. *Autism* 23(2): 271–273.
- Frauenberger C, Spiel K and Makhaeva J (2019) Thinking OutsideTheBox – Designing smart things with autistic children. *International Journal of Human-computer Interaction* 35(8): 666–678.
- Heath S, Charles V, Crow, G, et al. (2007) Informed consent, gatekeepers and go-betweens: Negotiating consent in child- and youth-orientated institutions. *British Educational Research Journal* 33(3): 403–417. Available at: <https://doi.org/10.1080/01411920701243651>

- Iversen OS, Smith RC and Dindler C (2017) Child as protagonist: Expanding the role of children in participatory design. In: IDC '17: Proceedings of the 2017 Conference on Interaction Design and Children, Stanford, CA, USA, 27–30 June 2017, pp. 27–37. New York: Association for Computing Machinery.
- Lambert J (2009) *Digital Storytelling: Capturing Lives, Creating Community*. 3rd ed. Berkeley, CA: Digital Diner Press.
- Moosa-Mitha M (2005) A difference-centred alternative to theorization of children's citizenship rights. *Citizenship Studies* 9(4): 369–388.
- Moran-Ellis J (2010) Reflections on the sociology of childhood in the UK. *Current Sociology* 58(2): 186–205.
- Morrow V and Richards M (1996) The ethics of social research with children: An overview. *Children and Society* 10: 90–105.
- Parsons S (2021) The importance of collaboration for knowledge co-construction in 'close-to-practice' research. *British Educational Research Journal* 47(6): 1490–1499.
- Parsons S and Cobb S (2014) Reflections on the role of the 'users': Challenges in a multi-disciplinary context of learner-centred design for children on the autism spectrum. *International Journal of Research and Method in Education* 37(4): 421–441.
- Parsons S, Guldborg K, Porayska-Pomsta K, et al. (2015) Digital stories as a method for evidence-based practice and knowledge co-creation in technology-enhanced learning for children with autism. *International Journal of Research and Method in Education* 38(3): 247–271.
- Parsons S and Kovshoff H (2019) Building the evidence base through school-research Building the evidence base through school- partnerships in autism education: Partnerships in autism education The Autism Community Research ACoRNS was established. *Good Autism Practice* 20(1): 5–12.
- Parsons S, Ivil K and Kovshoff H (2020) 'Seeing is believing': Exploring the perspectives of young autistic children through Digital Stories. *Journal of Early Childhood Research* 19(2): 1–18.
- Pellicano E and den Houting J (2022) Annual research review: Shifting from 'normal science' to neurodiversity in autism science. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 63(4): 381–396.
- Ward V (2024) *Reimagining Co-Production as Playful Learning: A New Perspective on Autistic Students' Experiences of Participatory Design and Digital Storytelling*. Doctoral Thesis. University of Southampton, Southampton. Available at: <http://eprints.soton.ac.uk/id/eprint/487226> (accessed 19 April 2024).
- Ward V, Parsons S, Kovshoff H, et al. (2022) Co-creation of research and design during a coding club with autistic students using multimodal participatory methods and analysis. *Frontiers in Education* 7: 1–17.

Author biographies

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Sarah Parsons is Professor of Autism and Inclusion at Southampton Education School, University of Southampton. She co-directs the Autism Community Research Network @Southampton [ACoRNS], which is a research-practice partnership focused on addressing research questions that come from, and matter to, practice through placing the experiences and voices of autistic children and young people at the centre of the work.

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