

UCM Nursery in Residence Project End of Project Report

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(children's names have been changed for reasons of confidentiality)

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Executive Summary

*'Stand aside for a while and leave room for learning, observe what children do, and then, you have understood it well, perhaps teaching will be different from before.'*¹

Loris Malaguzzi (p82)



In October 2017, nine children from a Cambridge City Nursery spent five consecutive mornings 'In Residence' at The Fitzwilliam Museum and Cambridge University Botanic Garden. The project was co-created by a multi-disciplinary team of museum, garden and nursery practitioners. We hoped that the residency would give us the opportunity to, '*stand aside for a while and leave room for learning*' as Malaguzzi describes above. By working in partnership to create opportunities for young children to explore the museum and garden, we were interested in developing a better understanding of what the museum and garden offered to young learners and to share and develop good practice in both settings.

The end of project report explores the idea of research as practice through a series of detailed case studies. The case studies were created by drawing on data we collected during the course of the project which included photographs, art work, field notes, interviews and video footage. The report and case studies were written in consultation with the museum, garden and nursery practitioners and our methodology acknowledges the power of action research and 'enquiry through practice' (see Pringle, 2018)². Our research process has been a continual cycle of discussion, review, reflection and documentation whilst remaining mindful of our need to engage reflexively and acknowledge our pre-conceptions, bias and interests. We hope that by documenting our journey in this way, we can both share our learning with other practitioners and demonstrate the value of empirical practitioner led research of this kind.

¹ Malguzzi, L. (1998) *History, ideas, and basic philosophy: An interview with Lella Gandini* in Edwards, C., Gandini, L. and Forman, G. (Eds.) *The hundred languages of children: The Reggio Emilia approach - Advanced Reflections* (Ablex: Greenwich, CT) pp.49-97

² Pringle, E (2018) Enquiry Through Practice at Tate from [PRAM \(Practitioner Research in the Art Museum\)](#) Blog

What we found out

Young Children's Meaning Making in the Museum and Garden

- The case studies demonstrate that even the very youngest children care deeply about museum and garden collections. There are many examples within the data we collected of children forming deep and personal connections with the objects they encountered. They also demonstrated a sensitivity to issues of display, preservation and conservation.
- As the children developed their confidence over the course of the residency, they also revealed a growing sense of ownership and belonging³ within the museum and garden.
- Transitional objects such as learning journals, sketchbooks and small world toys enabled the children and practitioners to make links and build bridges between the different settings.
- The project enabled adult and child participants to work together to create knowledge about places, spaces, objects, and collections. Meanings were actively constructed and enacted in a variety of different ways, using bodies, movement, words, and touch.
- The project gave practitioners the space and time to allow children to respond to their experience in many different ways. However, it also highlighted the many contradictory messages that we give about freedom and control within the museum and garden environment.

Extending and Developing Professional Practice in the Different Settings

- The case studies enabled us to identify challenges and contradictions within our practice which might have otherwise gone unnoticed. This has highlighted the potential of detailed empirical research of this kind to help practitioners to acknowledge their blind spots.
- Although the focus of the project was on a very small group of children, the impact on the professional development of the practitioners and on museum and garden learning programmes promises a much wider impact. It will be interesting to reflect on this in the future.
- The nursery staff took ideas and approaches they observed as part of the residency back to their setting so that other children could experience and benefit from them. In the end of project interviews they reflected on how the extended time in new spaces refreshed their professional creativity.
- The process of discussing, reflecting and writing has taken over six months to complete. This is due to a variety of different factors, not least that our position as practitioner-researchers means that we have other projects and commitments running simultaneously. Our methodological framework required a collaborative approach at all stages of the project. This is necessarily time consuming. All members of the project team have been actively involved in commenting on and contributing to this written report. These discussions have played an important role in our developing understanding of practitioner research. It is important to consider the extended time necessary to facilitate this process when planning future collaborative research.

³ National Foundation for Educational Research (2015) *Using Quality Principles in work for, by and with Children and Young People: Results of a Pilot Study* <https://www.nfer.ac.uk/media/1567/acyq01.pdf>

- This project has enabled us to better understand and articulate the potential of collaborative practitioner-led research in informal learning contexts. This represents a significant area for future development.

Next Steps

1. **We would like to make the case for other practitioners and children to have the opportunity to undertake projects of this kind.** We were extremely privileged to have been given the opportunity to work with a small group of children in such an in depth and sustained way. Although we acknowledge the limitations of our project, the residency provided the project team with the opportunity to step back, to observe and to think deeply about our practice.
2. **Nursery practitioners began to incorporate some of the ideas and approaches that they had experienced and observed in the museum and garden into their practice back at the nursery.** One of our next steps at the University of Cambridge Museums will be to see how we can develop our training offer for practitioners from different settings building on our Initial Teacher Education and Continuing Professional Development programmes and extending our work with existing partners.
3. **Feedback from the nursery practitioners demonstrated how they had been inspired and refreshed by the project.** Sabbatical placements are one of the suggestions put forward in a recent government consultation (DfE, 2018)⁴ as to how to improve teachers' professional career development. This project points the way for the potential of gardens and cultural providers to support the education sector to develop a more creative, embedded and community led approach to professional and curriculum development.
4. **The case studies remind us that young children are capable and intelligent citizens who have important contributions to make to our shared spaces and places.** As museum and garden educators and practitioner researchers we are perhaps in a unique position in terms of our ability to witness and document the complex, multi-dimensional and creative learning of young children that happens in our shared spaces.
5. We hope that this project has helped to demonstrate that **young children have an important contribution to make as citizens now, not just as adults of the future.** Young children can and should be given opportunities to take an active and participatory role within our museums and collections. This extended residency, and the subsequent analysis by a multi-disciplinary team of practitioner-researchers, has been one way of both enabling children to contribute to and develop the ways in which we use collections right now. Our practitioner research project allowed us to take the time to really listen and understand their multiple voices and perspectives. In the business of our day to day work in the museum, garden and nursery this has been a rare and precious opportunity.

⁴ [Department for Education \(2018\) *Strengthening Qualified Teacher Status and Improving career progression for teachers*](#)

1. Introduction

1.1 Background

The Nursery in Residence was inspired by 'My Primary School is at the Museum' project⁵ after educators from the Fitzwilliam Museum (FM) and Cambridge University Botanic Garden (CUBG) attended a conference at King's College London in March 2017. 'My Primary School is at the Museum' reported increased interest from both the children and the school staff to explore the potential of the museums. This was found to also have had an impact on families, who learned about the museums through the school visits. The CUBG and FM educators were interested in the depth of engagement that was stimulated through the residency projects and the close working relationships that were established between museum and classroom practitioners.



Figure 1 - listening to a story in the garden

The FM/CUBG residency project did not aim to replicate or validate the findings of the original project but was designed to explore the outcomes of one nursery residency located between the two settings. As practitioner-researchers, a key focus of the project was the development of reflective practice for all the educators involved. As this was an exploratory, pilot project, it was important that all the practitioners involved had a shared understanding around their pedagogical approaches in order to collaborate successfully. For this reason, the nursery chosen to take part in the project was one which has had prior involvement with the Fitzwilliam Museum over a number of years⁶. ACE Nursery School is a popular nursery in the heart of Cambridge which was founded in 1966 and now welcomes up to 40 children per session. ACE is run as a parent co-operative and the community of parents, teachers and children fosters individual development within a context of co-operation, mutual responsibility and respect.

⁵<https://www.kcl.ac.uk/Cultural/-/Projects/My-Primary-School-is-at-the-Museum.aspx>

⁶ Blog post following a previous visit by ACE Nursery to the Fitzwilliam Museum <https://camunivmuseums.wordpress.com/2015/11/19/maximilian-the-magnificent-young-children-animals-in-the-armoury/>

The Cambridge University Botanic Garden and the eight University of Cambridge Museums (UCM) house world-class collections for researchers, students and members of the public. With more than five million works of art, artefacts, and specimens, the collections span four and a half million years. The UCM consortium focuses on unlocking the University's collections, and the research activities that underpin them, for a larger and more diverse audience. Welcoming children and young people is a key objective within the UCM audience engagement strategy and with the support of Arts Council Funding they provide a wide range of opportunities for schools and families to engage with the objects and ideas in their collections. In the last 10 years the Museums and Garden have begun to provide activities specifically targeted at children under 5 years old. The FM and CUBG have collaborated on a number of events for preschoolers and run activities for preschoolers as part of their main public programme and during University of Cambridge Public Engagement Events⁷. UCM partnership projects provide valuable opportunities for staff and visitors to explore the crossover between the arts and science within our collections. In addition to these specific programme strands aimed at Early Years children, families with children under five make up a significant proportion of the audience for general family learning provision. In 2016, around 25% of attendees at the Fitzwilliam Museum's Family First Saturdays drop in activities are under five. In the same year 1,100 young children attended family Saturday events at CUBG and 791 children visited with 95 Early Years groups.

Both the Fitzwilliam Museum and the Botanic Garden also offer opportunities to individuals or groups who may not routinely access their public programmes. These include preschools, nurseries, our local children's hospice (EACH) and Children's Centres in targeted locations in Cambridge. Collaboration with Family Workers means that we can contact and develop relationships with families who have previously had little awareness or engagement with UCM. This work has been informed by the findings of a commissioned research report on the Families Outreach Programme at the Fitzwilliam⁸. In 2017 the Fitzwilliam piloted the Creative Families Award – a course based on the structure of Arts Award, but aimed at children under 4. The essence of the course is to listen to children, following their interests and finding ways to record and communicate their ideas, which were also strong themes within this residency project.⁹ At CUBG the team have been working on a pilot project with new young mothers and their children from a local Children's Centre.

⁷ For more details of links with University festivals <https://camunivmuseums.wordpress.com/2015/12/04/the-grand-total-a-museum-session-for-preschoolers-their-grandparents/>

<https://camunivmuseums.wordpress.com/2017/04/26/science-art-and-wonder-preschoolers-at-the-science-festival/>

⁸ Jensen, E (2010) Something Different: A pilot study evaluating family outreach activities at the Fitzwilliam Museum <http://www.fitzmuseum.cam.ac.uk/sites/default/files/FamilyOutreachPilotEvaluationMay2010.pdf>

⁹ For more details on Creative Families <http://www.museums.cam.ac.uk/blog/2017/03/29/creative-families-the-first-step/>
<http://www.museums.cam.ac.uk/blog/2017/06/14/creative-families-the-next-step/>

1.2 Aims of the Project

The UCM Nursery in Residence Project aims can be split into three distinct strands relating to audiences, practice and knowledge generation.

For children

- To create a rich and meaningful experience of extended engagement with The Fitzwilliam Museum and CUBG for selected children from ACE nursery;
- To stimulate ideas for new sessions that could be offered to other groups of young children;

For practitioners

- To enable closer collaboration between educators at the Museum, Botanic Garden and Nursery;
- To raise awareness of cross-sector practice focusing in particular on the intersection between arts and science based creative learning and problem solving;

For the sector

- To work towards a deeper understanding of the learning and play that takes place in museums and gardens and the differences and similarities between the outdoor and indoor spaces, formal and informal spaces;
- To document the residency as part of an action research project in order that the outcomes might be shared with key stakeholders – parents, nursery staff, museum and early years professionals, funding bodies and researchers.

1.3 Overview of the Report



Figure 2 – the importance of closeness

‘Proximity, relationships, care, sensitivity to local contexts and local social actors may engender rationality – a rationality of listening and care that may prove to explain the phenomenon in depth.’ (Formosinho and Oliveira Formosinho, 2012)¹⁰

Although we hope this project will be of interest to practitioners in other contexts, our intention was not to produce generalisable findings or guidelines for practice. Instead, we have adopted a praxeological research methodology that embraced our positionality as practitioner-researchers, deeply involved with and committed to our co-learners: the participants in the research. This attachment, rather than being seen as a barrier to objectivity, was instead used positively to enable us to build a richly layered understanding of what took place during the residency.

In the next section we will present some of the reading and theory that underpins our practice as educators and that has informed the design of this action research project. We will then review and explain our methodological considerations and decisions and describe how we collected and analysed the data. The main part of the report is taken up with four detailed case studies which we review and discuss. The final part of the report summarises our findings and asks what the future might be for work of this kind.

¹⁰Formosinhso, J. and Oliveira Formosinho, J. (2012) *Towards a social science of the social: the contribution of praxeological research in European Early Childhood Education Research Journal* 20 (4)

2. Review of Existing Research and Practice With Young Children in Museums and Gardens

This chapter will start with a review of the changing role of museums in the last few years and relate this to our own project and some the theoretical assumptions inherent in our practice as educators. We will then consider a growing body of research exploring how young children make meaning in museums and outdoor spaces and how this relates to our study. In the final part of the review we will look at literature relating to multidisciplinary practitioner research.

2.1 The Changing Role of Museums and Gardens

The Fitzwilliam Museum was founded in 1816 'for the increase of learning' and in the 21st century we:

- **welcome** everyone to the museum, respecting individual needs and creating a positive ongoing relationship with our cultural spaces;
- **enable** learning from a wide variety of real objects in a unique environment;
- **encourage** creative, independent enquiry-based learning;
- **share** expertise in learning and collections; and
- **collaborate** with audiences to plan our programme.

Fitzwilliam Museum Learning Key Principles

This statement is taken from the learning pages of the website and seeks to articulate the role of the museum in the 21st Century by placing an emphasis on welcoming, enabling, encouraging, sharing and collaborating with audiences. Over the last twenty years, museums have become increasingly aware of the need to change and adapt in order to both demonstrate their relevance and to respond to the many social, political and economic challenges within their local communities (see McSweeney and Kavanagh, 2016¹¹, Museums Association 2013¹² and Simon, 2010.¹³) In the *Review of the Value of Museums and Galleries*, Scott, Dodd and Sandell (2014)¹⁴ argue that in these changing times the user will play a more active role than ever before and they call for an increased interest and awareness of users as 'co-interpreters of meaning' rather than 'as passive receivers of institutional knowledge.'¹⁵ Our project can be situated within this context, as we place young children and the practitioners at the centre as we hope to learn with and from each other.

There has also been an equivalent shift in how the role of the Botanical Garden is perceived, with increasing importance given to the role they can play in bringing positive benefits to the widest possible community:

¹¹ McSweeney, K. & Kavanagh, J. (2016) *Museum Participation: New Directions for Audience Collaboration* (London: Museums Etc.)

¹² Museums Association (2013) *Museums Change Lives*

¹³ Simon, N. (2010) *The Participatory Museum* (accessed online 21.3.18 <http://www.participatorymuseum.org/read/>)

¹⁴ Scott, C., Dodd, J. and Sandell, R. (2014) *User Value of museum and galleries, a critical view of the literature* (AHRC)

¹⁵ Ibid P8

'Botanic gardens can contribute to actively changing attitudes and behaviour towards the natural world. They have the potential to convey the relevance of plants to human life, and the impact which human lifestyles have upon the natural world, to every part of the societal spectrum.' (p.8)¹⁶

Learning is central to the purpose of the Cambridge University Botanic Garden:

*The Garden is an inspirational, natural outdoor classroom for all ages; a place to develop knowledge, encourage creativity and bring learning to life. Our learning programmes deliver activities for schools, colleges, community groups, families and adults.*¹⁷

There are also important gains to be made for the museum or garden that develops its youngest audience:

'Aiming at under fives seems...to hit a number of targets: social inclusion; family involvement in learning...socialization of the very young and building a new audience base for museums.' (Reeve, 2006, p. 49)¹⁸

However, these 'targets' can only be met in a meaningful way if we seek to improve our understanding of the complex relationships between young children and the places that they visit, and how these develop over time. This exploratory study has the potential to add to our understanding of what this might look like in practice.

This approach is not new to us as educators. The learning programmes at both the museum and garden understand learning as being socially constructed, through interaction with people, spaces and objects (Vygotsky, 1930¹⁹ Woods, 1988²⁰). Participants are active within this process, creating meaning from each other, from the environment and from their words and actions. This necessitates an approach to teaching, and to research, which views all participants as competent and entitled to contribute to the formation of new understandings.

2.2 'Multidimensional learning' in museums and galleries

In their review of children's museum experiences, Anderson et al. (2002)²¹ highlight the multidimensional aspects of learning that may be embedded in a museum visit:

¹⁶ Dodd, J. and Jones, C. (2010) *Redefining the role of botanic gardens – towards a new social purpose* (Leicester: Research Centre for Museum and Galleries and Botanic Gardens Conservation International)

¹⁷ Taken from the Cambridge University Botanic Gardens Education Strategy (?)

¹⁸ Reeve, J. (2006) *Prioritising Audience Groups* in Lang, C., Reeve, J. and Woollard, V. (eds) *The Responsive Museum: Working with Audiences in the twenty-first century* (Aldershot: Ashgate) p. 43-60

¹⁹ Vygotsky, L. (1930) *Mind and Society* (Cambridge, MA: Harvard University Press)

²⁰ Wood, D. (1988) *How Children Think and Learn* (Oxford: Blackwell)

²¹ Anderson, D., Piscitelli, B., Weier, K., Everett, M. and Taylor, C. (2002) *Children's Museum Experiences: Identifying Powerful Mediators of Learning* in *Curator* (Vol. 45, No.3) pp. 214-229

- Aesthetic aspects – which include not only sensory and perceptual experiences, but also emotional and embodied responses
- Socio-cultural perspectives – the interaction between visitors and museum processes, and also the role of prior knowledge
- Cognitive aspects – knowledge construction based on people and objects
- Motivational aspects – how learning is directed through choices and challenges
- Collaborative aspects – which may be included in all the above

This list points to aesthetics, context, knowledge, motivation and collaboration as potential areas of interest for our own study exploring how young children make meaning at the Garden and Museum. It is interesting to link these multidimensional aspects to Vygotskian notions of the child's use of external semiotic activity such as talk, drawing and gesture as powerful 'tools of thought' (1986).²² Within a social constructivist model, the actions of the child are understood to create a link between thinking and experience. Vygotsky proposed that development is best evidenced by looking at process, in order to build a picture of changes within the individual and this process is understood to be rooted within a specific socio-cultural context. This will be important to consider when looking at the differing contexts of museum and garden.

2.3 Aesthetic development: the conflict between feeling and knowing

The social constructivist paradigm can be seen to be in conflict with work which has focused on the aesthetic development of young children in which development is seen as being more linear and fixed. Kerlavage (1995)²³ summarises previous literature on the subject of young children's aesthetic development, by identifying three progressive stages: the sensorial, concrete and expressive. The aesthetic account states that preschool-aged children are likely to be in the sensorial stage of development, and projects researching children's experiences in museums and art galleries seem to confirm this. Danko-McGhee (2006)²⁴, Parsons (1987)²⁵ and Piscitelli (1991)²⁶ all concluded that young children are drawn to works using bright colours used to create high contrast, and also to those which depict subject matter that is familiar to them. These models perceive aesthetic development as a linear process where the child moves first through one, then through another and so on. These aesthetic accounts suggest that as long as something is brightly coloured and/or recognisable then it should appeal to children and they will be able to connect with it. It will be interesting to see if we find evidence of these aesthetic preferences in the young children within our project.

Weier (2004)²⁷, when analysing the Child Guides Project at the Museum of Contemporary Art, Sydney, quotes a number of children discussing the use of colour in paintings, frequently choosing particular colours as a reason for liking a certain artwork (pg. 110/111). Weier uses this to make

²² Vygotsky, L. (1986) *Thought and Language* (Massachusetts, MIT) p102

²³ Kerlavage, M. (1995) *A Bunch of Naked Ladies and a Tiger* in Thompson, C. (Ed.) *The Visual Arts and Early Childhood Learning* (Alexandria, VA: National Art Education Association)

²⁴ Danko-McGee (2006) *Nurturing Aesthetics in Young Children: Developing Appropriate Art Viewing Experiences* in *The Journal of the National Art Education Association* (Vol. 59, No.3) pp. 20-24

²⁵ Parsons, M. (1987) *How we understand art: A cognitive developmental account of aesthetic experience* (Cambridge: Cambridge University Press)

²⁶ Piscitelli, B. *Children in Museums* in *The Arts in Early Childhood* (New Jersey: Prentice Hall)

²⁷ Weier, K. (2004) *Empowering Young Children in Art Museums: letting them take the lead* in *Contemporary Issues in Early Years* (Vol. 5, No.1) pp.106-115

recommendations for adults working in museum and gallery settings, advising that they ‘may draw attention to colour, line, shape and texture, or the materials used by the artist’ (pg.113) rather than overwhelming children with art historical details. However, when we overlay Anderson et al.’s 2002 analysis, we can see how socio-cultural and motivational aspects of learning are also involved here: if adults focus children’s attention on colour and so on, then children are likely to feel that this is of importance and value and hence talk about it to adults. We may then misinterpret this by assuming that young children are particularly entranced by bright colours for example. There are some ways of encountering art that seem to be particularly appealing to young children regardless of the visual features of the work. When works are presented as part of a story, for example (Anderson et al., 2002), or combined with tactile or making experiences (Gross et al., 2009²⁸) they seem to be interpreted as more valuable to children and hence more memorable. This links with research about learning from nature where Waters (2011)²⁹ explored ways in which young children and their educators use narrative and anthropomorphising play to make connections with the botanical world. The Early Years Programme at the museum and garden both make use of handling objects, small world resources, and storytelling throughout their programmes. It will be important to consider the impact of activities of this kind when making plans for possible activities as part of the residency project.

Eglinton (2003)³⁰ confirms that children may be drawn to objects which offer a ‘pleasant sensory response’, ‘beautiful vibrant colour’, or ‘pattern’ (p.45). However, Eglinton moves beyond a purely aesthetic response to suggest that adults should ‘always encourage children to actively use [sic] their senses; facilitate learning through touch, acting, pretending, and doing’ (pg. 45). These last three represent a very broad understanding of what might be termed ‘sensorial’. In acting, pretending and doing, we are required to draw on many kinds of understanding of a work – not simply what we can see, touch and so on - but where and how it might fit into our own personal context. It will be really interesting to unpick what we mean by ‘sensory experience’ in the different contexts of the museum and garden. Both offer many sensory possibilities and challenges, and a trail for family visits. How will the young children respond to these?

Other researchers have argued that it is not enough simply to stimulate young children’s senses alone on a museum visit and made the case that they require (and deserve) a deeper engagement with artworks. Hein (1998)³¹ cites the findings of Duckworth et al. (1990)³², who advocate a “minds-on”, rather than purely “hands-on”, or indeed “senses-on” approach.

2.4 Dialogic experience and interactions between people, places and objects

There is much literature relating to dialogic practice in museums and the cognitive challenges created through interaction between participant, educator and object. This links to the social constructivist paradigm underpinning many museum learning programmes. Burnham and Kai-Kee

²⁸ Gross, J., Hayne, H. and Drury, T. (2009) *Drawing Facilitates Children’s Reports of Factual and Narrative Information: Implications for Educational Contexts* in *Applied Cognitive Psychology* (Vol. 23, No.7) pp. 953-971

²⁹ Waters, P. (2011) *Trees Talk: Are You Listening? Nature, Narrative and Children’s Anthropocentric Place-Based Play in Children, Youth and Environments* 21 (1) pp. 243-252

³⁰ Eglinton, A. (2003) *Art in the Early Years* (London: Routledge Farmer)

³¹ Hein, G. (1998) *Learning in the Museum* (London: Routledge)

³² Duckworth, E., Easley, J., Hawkins, D., Henriques, A. (1990) *Science Education: A Minds-On Approach for the Elementary Years* (Hillsdale: Open University Press)

(2011)³³ argue for a dialogic approach to working from museum objects, in which all feel able to contribute, and to bring something of themselves. This is not done with a purpose of making specific learning gains about the artwork itself, but bringing people and art together in a transformative experience which leaves everyone the richer for it. Although not focused on work with young children, and in fact Burnham and Kai-Kee say of their approach, *‘with students in third grade [aged 7-9] or below, some adjustments may be necessary, since teaching groups of very young children is a special calling’*, the willingness to listen, to give, and to respect people for their ‘otherness’ is a feature of a more democratic pedagogy within early years practice as described in detail by Dahlberg and Moss (2005).³⁴

Dooley and Welch (2014)³⁵, examined the interactions of young children and adult caregivers in a children’s art museum. They focused principally on parents’ interactions with their children rather than the work of practitioners, however, they also emphasise the museum as a dialogic learning space. They observed that adults’ perceptions and preconceived ideas about the children’s relative expertise in relation to the museum objects had a crucial bearing on their interactions. This is perhaps in contrast to true dialogic practice in which there is space for surprise and for children to come to an encounter as they are, rather than as we adults imagine that they might be. It will be interesting to interrogate our own data for evidence of practitioner preconceptions.

Macrae et al. (2017)³⁶ also unpick events as they are, rather than as they might be in the future, with their focus on “sticky data” emerging from studies of young children in the Clore Interactive Studio in Manchester City Art Gallery. They suggest that the way that museums bring objects, people and spaces together in unexpected ways brings enormous potential for such moments in which surprising connections and relationships can be made. They go on to explore how previous application of social constructivist learning theory to museum learning cannot account for the complexity of these encounters. Instead they propose a post-human reading, in which people, spaces and objects are enmeshed with each other, coming together in ways that decrease the primacy of the human child as autonomous subject, held instead in a network of meaning alongside non-human elements. It will be important to consider the role of spaces and objects within the nursery residency.

Clarkin-Phillips et al.’s (2013)³⁷ work also focused on children and spaces, but in quite a different way. They looked at students at a Kindergarten on the ground floor of the Museum of New Zealand Te Papa Tongawera, where one might expect that learning, doing and being was already in some ways enmeshed with the museum and its spaces. However, through multiple visits to a European Masters exhibition, the children came to know the spaces of the galleries in new ways. The moments remarked on by the teachers and researchers were not so much the embodied experiences of being in the space, but the way that they children learned the conventions and significance of the gallery environment and felt that these were meanings they could harness and

³³ Burnham, R. and Kai-Kee, E (2011) *Teaching in the Art Museum: Interpretation as Experience* (Los Angeles: Getty Publications)

³⁴ Dahlberg, G. and Moss, P. (2005) *Ethics and Politics in Early Childhood Education* (London and New York: RoutledgeFarmer)

³⁵ Dooley, C. and Welch, M. (2014) *Nature of Interactions Among Young Children and Adult Caregivers in a Children’s Museum* in *Early Childhood Education Journal* (Vol. 42, No. 2, Mar 2014) pp. 125-132

³⁶ Macrae, B., Hackett, A., Holmes, R. and Jones, L. (2017) *Vibrancy, repetition, movement. Posthuman theories for reconceptualising young children in museums in Children’s Geographies* [published online 30/11/2017] (p.1-13)

³⁷ Clarkin-Phillips, J., Carr, M., Thomas, R., Waitai, M. and Lowe, J. (2013) *Stay Behind the Yellow Line: Young Children Constructing Knowledge from an Art Exhibition* in *Curator-The Museum Journal* (Vol.6, No. 4, Oct 2013) pp 407-420

use for themselves as they created and curated gallery spaces within the Kindergarten. It will be interesting to observe how the young participants in the nursery residency respond to the different conventions of art museum and botanic garden. The physical spaces and the way in which they navigate them, are certain to impact upon their meaning making.

2.5 Physical experience

The physical, embodied experience of being in museums for young children has been examined in recent years by Hackett (2016)³⁸ and Piscitelli and Penfold (2015)³⁹, and featured heavily in Dockett et al's (2011)⁴⁰ study on co-designing a museum space with young children. Kirk (2014)⁴¹ questions the way in which young children visiting museums are viewed as either 'little learners' or simply component parts of families rather than individuals with their own identities. Birch (2018)⁴² goes further – suggesting that museum design and practice (including when it takes an approach grounded in 'child-friendliness') has traditionally 'othered' children by positioning them in an oppositional relation to adults. Birch instead argues for a drawing together of these groups articulating their shared needs and experiences rather than their differences. Interestingly, one aspect of museum visiting that she describes as shared by both adults and children is the tendency to anthropomorphise non-human objects, conceptualising them as having the freedom to think, feel, and act. This can also be seen in the literature on developing relationships with the non-human natural world (Gebhard et al., 2003)⁴³, where children were found to understand trees and plants in terms of their own emotional and physical experiences. It will be interesting to see if the children in our project respond to the natural environment of the Botanic Garden in this way.

2.6 Young children in Botanic Gardens

Although working in a 'wild' environment rather than a botanic garden, the Outdoor Learning Project (Waller, 2007)⁴⁴ reported a number of findings which might be of relevance to our Nursery in Residency research. He observed the important role of spaces in which children can '*engage as social actors in their own right*' (p.404) and explored the possibility of shared meaning making as a community of children and adults as opposed to individualised learning. Waller also emphasised the value of giving children the time to engage deeply with spaces and people over a sustained

³⁸ Hackett, A. *Young Children as Wayfarers: learning about place by moving through it* in *Children and Society* (Vol. 30, No. 3) pp 169-179

³⁹ Piscitelli, B. and Penfold, L. *Child-centred Practice in Museums: Experiential Learning through Creative Play at the Ipswich Art Gallery* in *Curator-The Museum Journal* (Vol. 58, No. 3, July 2015) pp 263-280

⁴⁰ Dockett, S., Main, S. and Kelly, L. (2011) *Consulting Young Children: Experiences from a Museum* in *Visitor Studies* (Vol 14, No. 1) pp 13-33

⁴¹ Kirk, E. (2014) *Crystal teeth and skeleton eggs: snapshots of young children's experiences in a natural history museum* [published online, available at <http://hdl.handle.net/2381/29320>] Accessed 8 March 2018

⁴² Birch, J. (2018) *Museum spaces and experiences for children – ambiguity and uncertainty in defining the space, the child and the experience* in *Children's Geographies* [published online 5 Mar 2018]

⁴³ Gebhard, U., Nevers, P., Billmann-Mahecha, E. (2003) *Moralizing Trees: Anthropomorphism and Identity in Children's Relationships to Nature* in Clayton, S. and Opatow, S. (Eds.) *Identity and the Natural Environment* (Cambridge, MA: MIT Press)

⁴⁴ Waller, T. (2007) '*The Trampoline Tree and the Swamp Monster with 18 heads': outdoor play in the Foundation Stage and Foundation Phase* in *Education 3-12* (Vol 35, No. 4, Nov 2007) pp. 393-407

period, and the reflective dialogue this permits. This approach is relevant to our residency project which will explore how children respond to a week of engagement with the museum and garden.

Although there are parallels between museum and garden learning programmes it is also important to acknowledge the differences. Knight (2011)⁴⁵ describes the physical, psychological and cognitive benefits that a Forest School approach can bring, in which outdoor spaces are seen as sites of adventure and exploration. Her findings have some parallels with the multi-dimensional aspects of museum learning that Anderson et al. demonstrated above. However, Knight's research also emphasised the need for an understanding of horticulture within this context: of nurturing and tending to plants. A Report by the Royal Botanic Garden Edinburgh (2015)⁴⁶ found that nature play, defined by first-hand interactions both *in* and *with* nature, was something that was relatively easy to facilitate in the Botanic Garden environment with appropriate planning, guidance and support. This is a kind of play that is valued by both parents and children and can be understood as shaping lifelong attitudes towards nature and conservation.

2.7 Literature that relates to multidisciplinary practitioner research and democratic practice

DeWitt et al. (2018)⁴⁷ analysed evaluation data gathered from two of the partnerships involved in the 'My Primary School is at the Museum' project. These two partnerships included children in the 3-5 age range. Outcomes of the project included increased confidence in the children over the course of the residency, and practitioners and parents reporting positive developments in the children's communication skills. They emphasise the importance of striking a balance between providing continuity through activities and resources that were familiar to the children and introducing them to new experiences. These findings will be useful to consider when planning for and reviewing our residency project.

Most significantly, DeWitt et al. highlight the fact that extended cultural residencies are a new way of engaging children with cultural spaces, and hence there is a lack of previous studies on which to build. In addition, much of the research on the experiences of children under five in similar spaces has focused on Children's Museums or Science Museums rather than art, history (or botanical) collections (Munley, 2012)⁴⁸. It is clear that there is a need to develop work in this area. In addition to the fact that there is no existing research in this area, our project also adds a unique contribution as a piece of action research. As practitioners, we have been able to give a very fine-grained insight into the experience of the residency, through our own critical perspectives as well as through reflective observations of the individual children and the group as a whole learning community. Through this connected positionality, embedded within the research process as participants ourselves, we aim to bring a new perspective (Pascal and Bertram, 2012)⁴⁹.

⁴⁵ Knight, S. (2011) *Risk and Adventure in Early Years Outdoor Play: Learning from Forest Schools* (London: Sage)

⁴⁶ Royal Botanic Garden Edinburgh (2015) *Nature Play: Nature Conservation* (<https://stories.rbge.org.uk/wp-content/uploads/2015/05/NaturePlayFinal.pdf>)

⁴⁷ DeWitt, J., King, H., Wright, D. and Measures, K. (2018) *The Potential of extended cultural residencies for young children in Museum Management and Curatorship* 33 (2)

⁴⁸ Munley, M. (2012) *Early Learning in Museums: A Review of the Literature* (Washington, DC: Smithsonian Institution)

⁴⁹ Pascal, C. and Bertram, T. (2012) *Praxis, Ethics and Power: Developing Praxeology as a Participatory Paradigm for Early Childhood Research in European Early Childhood Research Journal* 20 (4) pp. 477-492

A key aspect of working ethically within pedagogical research contexts is to give due regard to the power imbalances in the relationships we create. Dahlberg and Moss (2005)⁵⁰ take a postmodern view that ethical pedagogical practice is not simply a recipe of particular actions leading to a positive outcome whereby an unknowing child is transformed into a knowing one. Instead, they argue for a pedagogy that is relational, respectful and situated. They are clear that what happens in preschools (and other early educational contexts) has limited potential for impacting on 'major politics', and the powerful structural forces that lead to societal inequalities. They call instead for an engagement with what they call 'minor politics' in the ways in which we engage with young children through which we might call into question assumptions or ingrained ways of thinking. We will need to be aware of this both during the week of the project and when we come to review the data we collect.

Albon and Rosen (2014)⁵¹ also highlight what they term 'critical moments', where we are able to reconsider what we have previously taken for granted, as a key aspect of the relationships that can develop between young children and adults when engaged in research. They also discuss the inherent inequalities in these relationships, and emphasise that if we are genuinely going to work with reciprocity, then it is not enough simply to aim for research methods to be more participatory or empowering. Albon and Rosen, along with Barker and Weller (2013)⁵² question both these concepts, suggesting ways in which, despite researchers' best intentions, they might in fact work to reconfirm traditional hierarchical structures if this power or participation is 'gifted' to research subjects for our own purposes. Instead, a focus on respect for individuals, for relationships, and for democracy ultimately leads us to ask, if it is to be a truly ethical study, what difference our research will make to the communities we are engaging with? This is why it is important to consider the impact of our study beyond the week of the residency.

2.8 Summary

The review of existing literature in the area has revealed a lack of previous research around extended cultural residencies with the notable exception of the 'My Primary School is at the Museum' Project which was the inspiration for the current project. However, there is a growing interest in researching the complexity of the different ways in which young children interact with and make sense of spaces and places such as museums and gardens. If we are going to situate ourselves as practitioner researchers then it is clear that we will need to be aware of the ethical implications of this kind of exploration. These issues will now be further explored in the following chapter when we discuss how we designed and planned the residency project.

⁵⁰ Dahlberg, G. and Moss, P. (2005) *Ethics and Politics in Early Childhood Education* (Abingdon: RoutledgeFarmer)

⁵¹ Albon, D. and Rosen, R. (2014) *Negotiating Adult-Child Relationships in Early Childhood Research* (London: Routledge)

⁵² Barker, J. and Weller, S. (2008) "Is it Fun?" *Developing Children Centred Research Methods in International Journal of Sociology and Social Policy* (Vol. 23, No. 112) pp. 33-58

3. The Research Processes

'In light of the changing role of museum users as co-interpreters, co-producers and definers of value, the scarcity of dedicated studies that provide a nuanced and sophisticated understanding of user experience appears out of step.'

Scott et al. (2014)⁵³ p.28

In the AHRC Cultural Value Project Review of the Value of Museums and Galleries, Scott, Dodd and Sandell described the need for a new phase of more 'exploratory' research. This approach resonates with the social constructivist paradigm which underpins the ethos of our informal learning programmes at the Botanic Garden and Fitzwilliam Museum. In this chapter we will demonstrate how the research methodology for the UCM Nursery Residency Project drew upon the different experiences and perspectives of individual members of the team and was based on Pascal and Bertram's (2012)⁵⁴ model of action research. Our positionality as practitioner-researchers required us to engage reflexively: remaining mindful of our own pre-conceptions, biases and interests, and allowing these to come into dialogue with new experiences gained during the process rather than trying to eradicate them altogether. Our study was exploratory and deductive in nature and took an ethnographic approach. The data we collected included video footage, photographs, field notes, interviews, journals and children's drawings and artwork. This rich data enabled us to assemble a series of multi-layered case studies through which we could explore our research questions in detail.

3.1 Action Research and Praxeology

Action research is most often conceptualised as a spiral (eg O'Brien and Moules, 2007⁵⁵). However, this implies a single direction of movement from plan, to action, to reflection and on to a new plan. In our experience we understand that the situation is much less linear: we shuttle backwards and forwards between our convictions, theoretical knowledge and practical activity, all enriching each other in a hermeneutic weaving loom. This is particularly true in a collaborative multidisciplinary project like the UCM Nursery in Residence. MacNaughton and Hughes (2009)⁵⁶ begin to examine research as a way of thinking-by-doing: *'praxis informs our practice, which, in turn, informs our ideas.'* This description links well to our project which has been designed to extend our practice and inspire new strands of exploration and programming within the UCM.

Pascal and Bertram explore a model of action research that foregrounds and values individual participation whilst simultaneously acknowledging contribution to the wider community, working towards a more equitable distribution of power. Within this paradigm, praxeological research is defined to be:

- Ethical, moral and values-driven

⁵³ Scott, C., Dodd, J. and Sandell, R. (2014) *User Value of museum and galleries, a critical view of the literature* (AHRC)

⁵⁴ Pascal, C. and Bertram, T. (2012) *Praxis, Ethics and Power: Developing Praxeology as a Participatory Paradigm for Early Childhood Research* in *European Early Childhood Research Journal* 20 (4) p.477-492

⁵⁵ O'Brien, N. and Moules, T. (2007) *So round the spiral again: a reflective participatory research project with children and young people* in *Educational Action Research* 15 (3) p.385-402

⁵⁶ MacNaughton, G. and Hughes, P. (2009) *Doing action research in early childhood studies* (Maidenhead: Open University Press)

- Democratic, participatory, inclusionary and collaborative
- Motivated by a concern for social justice and equity
- Subjective and acknowledging of multiple perspectives
- Systematic and rigorous
- Action-based, useful, creative and transformational

Oliveira-Formosinho and Formosinho (2012)⁵⁷ extend this definition to explore what this approach might mean in terms of ethically responsible and democratic relationships between children and educators and their environments, which they name ‘Pedagogy-in-Participation’. Our project is based on the principles of praxeological action research and explores a cycle of planning-action-observation-reflection. However, rather than viewing this in terms of traditional action research, which focuses self-reflection and how to evolve our own personal practice, praxeology requires a focus on, and a commitment to learning together as a community. This necessitates research methods that enable equal and democratic relationships to form through the research process, and that the findings and resulting developments to practice, are made with shared outcomes in mind. We began our whole project with observations from multiple viewpoints, honouring the fact that each of us will be able to bring different understandings to what we observe. In keeping with our theoretical standpoint, we aimed to ensure that spoken, written, drawn, and embodied interpretations and contributions from adults and from children were all valued equally.

3.2 A Democratic Approach

The democratic approach that we were committed to throughout the project meant that it was important for all three settings to be involved, and able to shape the process, from the outset (see MacNaughton and Hughes, 2009). Educators from the Fitzwilliam Museum, Botanic Garden and ACE Nursery met six months in advance of the Residency Week itself to discuss both practical and theoretical aspects of the project. This was a vital discussion to ensure that the process of taking part in the project itself, as well as the subsequent application of new knowledge and development of practice, would make a meaningful and valuable contribution to everyone involved.

As Albon and Rosen (2014)⁵⁸ insist:

‘A crucial question in seeking to work with reciprocity...must be: What difference can our research make to the lives of marginalised collectivities – including the predominantly working-class and female early childhood workforce and the children in our research projects – during and beyond data generation?’ (p.131)

Our initial meeting also allowed us to explore shared understandings about young children and how they learn which shaped how the project developed. All the educators wanted to be able to adopt what might be described as a ‘pedagogy of listening’ (Rinaldi, 2006)⁵⁹, in which young children were seen as capable of creating their own knowledge, supported by responsive, respectful and interested adults. We all felt that the opportunity to engage with the real experience of museums

⁵⁷ Oliveira-Formosinho, J. and Formosinho, J. (2012) *Pedagogy-in-Participation: Childhood Association Educational Perspective* [Available online at researchgate.net – accessed 26/02/18]

⁵⁸ Albon, D. and Rosen, R. (2014) *Negotiating Adult-Child Relationships in Early Childhood Research* (London: Routledge)

⁵⁹ Rinaldi, C. (2006) *In Dialogue with Reggio Emilia: Listening, researching and learning* (London: Routledge)

and gardens, their collections and staff, over an extended period of time, could offer the children a unique learning experience.

The importance of a democratic and ethical approach to all aspects of the project was discussed, and this led the team to decisions about practicalities of the visit. We asked ourselves the following questions while we were planning the project:

- How could we support the children to feel at ease and confident to contribute within such an unfamiliar space, with unfamiliar adults?
- How could we balance the needs of the children to move, touch, make noise and be independent with the constrictions and limits of the public spaces of the garden and museum?
- How could we conceptualise the project in such a way as to advocate for young children and their educators to be seen as serious contributors to the research community?
- How could we ensure that the experiences and learning from this small group project would have wider benefits as well?

This democratic and collaborative approach also extended to the writing process. Initial drafts of the project report were sent to those members of the team not directly involved with writing up. The ethos of professional reflection, and respect for the different perspectives within our multi-disciplinary team that we had cultivated during the project week enabled honest and thoughtful feedback and commentary. It was necessary to consider how best to support team members, all busy educators with full timetables, to give their input on the written report. Some preferred to provide written annotations, whereas others gave their feedback and recommendations as part of a group discussion. Finding the time to allow this process to take place, and then editing the report in response to thoughts from the team was challenging, but essential in order that this report could reflect the rich variety of professional perspectives and expertise that shaped our thinking throughout the project. A summary of the findings was then shared with the children who had taken part (see Appendix 4)

3.3 Sampling

All the children who took part in the residency were between their 3rd and 4th birthdays at the time of the project. With regard to sampling, children who attended the nursery five days a week had priority, followed by those who attended four days. As the residency took place only a few weeks into the new school year, children who were showing signs of feeling unsettled and insecure in the new nursery environment were excluded from the study as we did not want to cause any disruption to the important process of attachment. Characteristics such as gender, socio-economic background and ethnicity were not part of our research questions and so these were not taken into account when recruiting children to the project. Therefore, the children may not be representative of the population of Cambridge as a whole, or even of the nursery cohort. With such a small sample it is not possible to make any generalisable claims about particular groups.

3.4 Informed Consent and Ongoing Assent

ACE Nursery spoke with families about the project and distributed information packs to them. All invited families chose to take part. The nursery staff and parents understood that the child as the participant in the project would have the final say about whether to take part or not. A child-friendly letter about the project that was sent to all families and the nursery practitioners prepared the children in advance by showing them photographs of the places they would visit and the people they would see.

Each child was asked on the day of each visit whether they would like to come to the museum/garden or stay at the nursery and their decision was respected. They were invited to write or draw on an image-based consent form to show their willingness to participate. Deciding not to write or draw on the form was understood as an easy way for children to withdraw their consent. In addition, the adults monitored the children closely throughout the visits, being especially sensitive to any signs that children did not wish to be photographed or videoed, and ensured a sufficiently high adult-child ratio so that individuals could move away from any activity they did not wish to participate in. All nine children took part in all the visits, but one child decided to stay at nursery on the final day.

3.5 Practical Arrangements

The nursery team are used to taking out groups of nine children and three adults, so we agreed to stick with this for consistency. We realised early on that not all the children at the nursery would be able to take part, so we had to consider not only how we would select children for the project, but also how we might involve those members of the nursery community who did not take part in the visits. During the course of the residency week, the children and practitioners returned to their settings and shared what had taken place that morning in the following ways:

- With the children's peers at nursery through discussions and play, and through adult-initiated activities that built on activities that had taken place at the museum and garden
- With the families, staff and wider nursery community through a project journal on display in the 'Parents' Room' at the nursery and daily blog posts written by the nursery educators
- With the wider community, including others involved in museum and garden education, through the social media feeds of the Fitzwilliam Museum and Botanic Garden education departments

We agreed that the children should have five consecutive morning visits between 10:00 and 12:00. Each visit would include some time in the museum or garden collection, followed by a snack break and then activities in the dedicated education spaces (art studio at the museum, classroom and schools garden area at the Botanic Garden). ACE Nursery decided to transport the children by taxi in order that the children would not be tired from walking when they arrived. We would spend two days each at the Garden and Museum but that we would ask the children to vote for where they would like to spend the final day of the residency. The nursery educators took this process very seriously and spoke to each child separately (on the telephone if necessary) following all the previous four visits about which place they would like to return to. Seven children chose the Museum and two chose the Botanic Garden, and so the final visit was to the Museum. An

important outcome for the project was supporting the development of children's views of themselves as confident citizens of these spaces. Choosing the destination of the final visit was an important way in which the children could experience, in an embodied manner, how their opinions are heard and have an impact on such places. Their active participation, therefore, was not simply a matter of politeness: of inviting the children to contribute their opinions out of courtesy or even adult curiosity, but had a direct link to the goals of the project (Facer and Pahl, 2017)⁶⁰.

One week before the residency, educators from the Museum and Garden went to visit the children at the nursery. The nine children involved were drawn from the two different classes in the nursery, and so they were brought as a group to meet the educators along with the three nursery practitioners who would be involved. The children were shown photographs of the Botanic Garden and the Museum and had the opportunity to talk about these, ask questions and talk about whether they had ever been to similar places before. Field notes were made to record these conversations. The children played in the nursery garden space while the educators observed and nursery practitioners briefly introduced the children and their current interests. This was also an opportunity to understand about the shared experience of the nursery space that all the children would bring on their visits, and the Botanic Garden staff in particular took the opportunity to notice the plants and trees that are part of the children's usual environment.

All the adults involved in the project were asked to complete pre-project questionnaires to record their current thoughts about museum and garden environments, and their aims and hopes for the project.

3.6 Data Collection

	Pre-project	During Project	After Project		
			+1 day	+2 weeks	+3 months
All Adults	Pre-project questionnaires	Structured fieldnotes	Post-project questionnaires	Follow up Interviews & Questionnaires	
Museum/ Garden Educators	Nursery visit field notes	Video and audio recordings/ photography			Nursery visit fieldnotes
Children		Children's Journals			Children's photograph choices
Nursery Practitioners		Project Journal & blog posts		Project Journal	Project Journal

Table 1 Data Collection Chart

⁶⁰ Facer, K. and Pahl, K. (Eds.) (2017) *Valuing Interdisciplinary Collaborative Research: Beyond Impact* (Bristol: Policy Press)

We collected a wide variety of different types of data in order to capture the richness and detail of the project and to enable the fine-grained qualitative analysis of the participant and practitioner experiences (see table 1). It was important to put a data strategy in place early on in the project to ensure that we were able to collect rich and meaningful data that would allow both rapid input into our Action Research feedback loops that were taking place each day, but which would also form the basis of the data analysis. It was decided that roles should be assigned in order to maximise accuracy of recording, but these were mutually agreed and changed as the week went on to allow all the project team to contribute in a variety of ways.

The nursery practitioners were not asked to record data during the activities themselves. There were two reasons for this:

1. The spaces are unfamiliar to the nursery practitioners, and this project offered them the opportunity to explore them in more detail. Trying to make video recordings or take lots of photographs or field notes suitable for data analysis would have diverted their attention away from this
2. The nursery practitioners are the ones who know the children best, and we wanted them to be alert to the needs of the group, observing learning, emotional responses, well-being and engagement and needed them to be able to intervene should any child require additional support without this compromising collection of the data

They did, however, use a nursery tablet to take photographs (the children also used this occasionally) to record the activities for their project journal at nursery, and for blog posts for parents. We have not included these photographs in our data analysis as access to the nursery hardware is restricted to the nursery staff.

We chose to use video recordings in order to capture the detail of what was happening in the multiple and multi-modal encounters between the children, adults, spaces and objects, as described in a similar approach taken by Yamada-Rice (2017)⁶¹. The advantage of video over other types of recording is that not only dialogue, but utterances, gestures, body language and facial expression, movement and spacing can all be captured. This yielded rich data from all participants, but proved particularly important for a child who did not speak during the residency.

When working in the garden, the Botanic Garden educators prioritised delivering the session and running the activities, therefore, the museum educators focused on making the film and taking the photographs. Similarly, at the museum it was the garden educators who made the video and image recordings while the museum staff concentrated on interaction with the children. This also allowed each set of educators to view learning delivery in each others' settings.

In order to have interesting material to analyse, but not so much as to be unmanageable, we made 10-minute clips every half an hour during the visits. This meant that we were able to record how the children entered and exited the spaces each day, plus three other moments during their visits which included both time in the collections and in the education spaces. When the group divided,

⁶¹ Yamada-Rice, D. *Using Visual and Digital Research Methods with Young Children* in Christensen, P. and James, A. (2017) (Eds.) *Research with Children: Perspectives and Practices* (Abingdon: Routledge)

then a decision had to be made about what to record as not everything could be captured by one camera. This was left to the discretion of the person making the video recording.

Voice recordings were also taken, although these were not scheduled in the same way: adults would simply set the Dictaphone down when the group seemed settled and likely to stay in one place for a while – for instance while drawing in the galleries or making artwork in the studio. We also took photographs in the intervening times, aiming to capture the full range of the activities that the different groups were involved in at a given moment. At the discretion of the photographer, additional photos were also taken at what were seen as significant moments.

Children contributed to the data in multiple ways, both passively through the video and photographic recordings, and actively through their artwork, responses to the stimuli provided by the spaces themselves and the adults' provocations, and also by answering direct questions about their experiences and ideas. At all times efforts were made to ensure that the children's contributions were a naturally integrated and meaningful part of their experience of the visits. Having a range of options available for the children to express their ideas was an important way of respecting the diversity of experiences and competencies that each child brought to the project. (Barker and Weller, 2003).⁶²

In addition, field notes were made throughout the sessions by the educators and visiting observers (Wendy James, the architect who initiated the 'My Primary School is at the Museum', project visited to observe on one day and was also invited to contribute to the data collection in this way). Again, to support rigorous analysis, the museum, garden and nursery educators were asked to record their fieldnotes in a consistent format to help to focus their observations on the research questions. Having everyone contribute their thoughts using this same format was another way to ensure that the data collection process was democratic and equitable: no one's observations were privileged above anyone else's.

Recording multiple perspectives on the same events can mean that results are able to be triangulated – that is to say that the reliability is increased by having more than one person reporting the same thing (Denscombe, 2014)⁶³. However, equally as interesting are the moments when meaning slips between multiple interpretations of the same event. Rather than viewing this negatively, however, it was felt that these differing or contradictory understandings might highlight in a useful way the different positionality of the various adults involved. As Tracy (2010)⁶⁴ makes clear, this could potentially lead to a richer interpretation of events than would be possible with only one member of the team responsible for recording the data. In addition, power over the information gathered and knowledge generated was more fairly distributed among the team.

These observation sheets formed the basis of reflective discussions held at the end of each session which were an important feature of this as a piece of Action Research. Regrettably, the nursery staff were only able to contribute to these briefly as they needed to return to the setting, however, having their notes meant that their ideas could also be brought into the discussions.

⁶² Barker, J. and Weller, S. (2003) "Is it Fun?" *Developing Children Centred Research Methods* in *International Journal of Sociology and Social Policy* 23 (112) p.33-58

⁶³ Denscombe, M. (2014) *The Good Research Guide for small-scale research projects* (Maidenhead: Open University Press)

⁶⁴ Tracy, S. (2010) *Qualitative Quality: 8 "Big Tent" Criteria for Excellent Qualitative Research* in *Qualitative Inquiry* 16 (10) 837-851

These daily conversations helped the team to share observations, try to unpick particularly significant moments and also plan how to build on the experiences the following day.

3.7 Data Analysis

We used grounded theory (Birks and Mills, 2015)⁶⁵ as a systematic approach to analysing the data. The research team spent time both individually and as a group watching the video clips, reading field notes and transcripts and reviewing children's entries in their journals. After multiple viewings and readings, we identified recurring themes based on an in-depth content analysis. These were constantly developing and changing as we continued to interrogate the data in greater depth. The codes were then drawn together into categories, which were tested by reworking them back through the data. Finally, these were refined into theories that could begin to respond to our research questions.

3.8 Summary

This project was based on a model of praxeological action research to examine how educators in Museums, Botanic Gardens and Early Years settings might collaborate and learn from each other to understand and develop stimulating and engaging activities for young children that help them to connect with museum and garden collections and spaces. Pre-school aged children's museum and garden experiences have not been studied as widely as those of older children so this study contributes to the development of ethnographic methodologies in this area. The project also offers reflection and insight into ways in which to listen to and record children's voices in order that their ideas, opinions and contributions form an integral part of the research, to provide what the Cultural Value Report described above as a more, '*nuanced and sophisticated understanding of user experience.*'

⁶⁵ Birks, M. and Mills, J. (2015) *Grounded Theory: A Practical Guide* (London: SAGE)

4. The Case Studies

Case Study 1: Amy and the flowers

Drawing to make meaning and to find a place to belong

Day One: Exploring the Schools Garden



Figure 3 Amy drawing with her key worker on Day 1

Having spent around 50 minutes exploring the wider Botanic Garden on day one, the group returned to the Schools' Garden. The children were offered a choice of activities: making leaf crowns indoors, sticking finds from their walk into the journals, playing outdoors. The children moved freely around the Schools Garden choosing from a range of activities throughout the space.

Amy starts her exploration of the garden by working with her key worker, Nursery Practitioner 1 (NP1) to take some photos of the Schools Garden on the Nursery Camera. She settles herself down on one of the child-sized benches with her journal and a tub of felt pens. Her keyworker sits nearby and watches attentively as she begins drawing. (Figure 3)



Figure 4 – Amy's drawing on Day 1

Amy repeats the same shape a number of times – starting with a small circle, and then adding curved lines that seem to grow out of the same starting point, each terminating with a tiny circle on the end. In spite of her keyworker's attempts to engage her in conversation about these, she remains silent: entirely focused on the task she has set herself. Amy has no interactions with the other children who are all busy taking part in activities elsewhere in the garden. After around 15 minutes, Jo approaches, wanting to take the toy lawn mower that is parked near Amy. 'No!' Amy cries and looks to NP1 for help. NP1 explains that actually it is fine for Jo to have the lawnmower as Amy is not using it. Amy accepts this and instantly returns to her drawings (Figure 4).

Day Two: Caterpillars & Creepy Crawlies

The Museum activities the following day focus on Dutch flower paintings, in order to encourage the children to make connections between the garden and gallery collections. The children sat in front of *A Vase of Flowers with a Monkey* by Ambrosius Bosschaert the Younger (1609-1645) while Museum Educator 2 (ME2) read the story of *The Very Hungry Caterpillar*. The group talked together about various paintings on display and the children were given their journals and pencils and invited to draw. While all the other children in the group choose to draw alongside each other in clusters of two or three, Amy found a position at a distance from the other children in a quiet corner of the Flowers Gallery (Gallery 17). Again, her keyworker approached and showed an interest by watching Amy and talking to her about her work (Figure 5).



Figure 5 – Amy drawing in Gallery 17

One of the Museum Educators (ME1), having seen that Amy seemed to be visually referring to a particular artwork also approached and the audio-recorder captured the following exchange:

ME1: Can you tell me about what you were drawing?

NP1: Can you tell [MT1] what you were doing?

ME1: What were you doing? And what were you looking at to get your ideas? What's this one here?

NP1: That's the thing with the flowers, is it? So how many flowers have you drawn?

Amy: One, two, three [counts to fifteen]

ME1: You've worked really hard on that, haven't you?

NP1: Tell [MT1] about this bit at the bottom. What did you say about those? Do you remember? What did you say was happening? What were they doing?



Figure 6 – Amy drawing in the Studio on Day 2



Figure 7 – Amy's drawings from Day 2, gallery (R) and the studio (L)

Amy: Growing up.

ME1: Growing up. So the flowers are growing up? And why did you choose these colours?

Amy: Cos I wanted them.

After around 15 minutes spent drawing, the group left the gallery, the children moved downstairs into the art studio and had a brief break for a snack sitting on floor rugs. A series of provocations have been arranged on a central table for the children to explore: clay, small jars of natural materials (including those collected at the Botanic Garden on the previous day), coloured feathers and clay tools. Some of the children go straight to the main table while others choose to work on the floor investigating some natural construction toys and small world props.

By contrast, Amy chose a chair at the edge of the room, gathered the same pencil case that had been used earlier and with all her materials in easy reach resumed drawing in her journal. A new page for a new drawing, but still the same shapes as before, this time larger, reaching further away from her and up the page, with scattered smaller clusters added at the top and bottom.

Day Three: Gruffalos & Snakes

After reading the story of the Gruffalo, the group searched around the ceramics gallery and talked about snakes and other animals, and the way they curl themselves around into different shapes. The children were given a more playful provocation to respond visually to the story by using string to make shapes. The children explored turning lines into shapes with the string and then were invited to record the shapes by drawing around and between the string in pencil.

Initially, Amy seizes the pencil and begins making tiny single versions of her habitual circles-and-sticks. However, with some encouragement she uses the string to make a snake and draws around it (Figure 8).

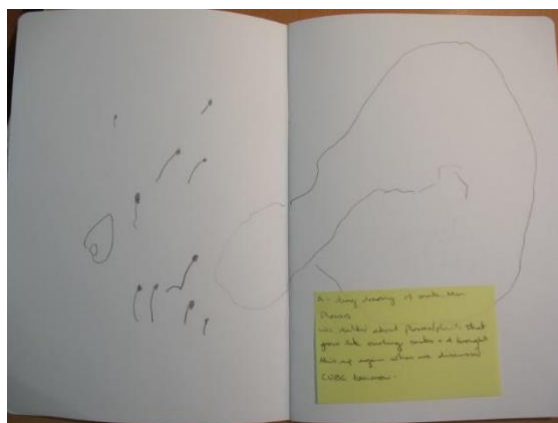


Figure 8 – Amy's string drawing

In the studio, Amy sets herself up as on the previous day with all her drawing materials to hand (Figure 9) and begins her circle-and-stick drawings, this time connecting them with a long base. The set up of the room had been altered following reflective discussions among the team at the end of the previous session. We had noticed that the adult height chairs and table seemed to be a barrier to some of the children to engaging with the table activities. We also know that children often associate table-based activities with adult-directed 'work' and the floor with child-driven 'play' (Fein, 1985)⁶⁶, so we had now installed a large roll of paper cascading down from the table to the floor, duplicating some of the materials in both the table and floor space. This permitted children to engage with drawing and mark making activities while standing up or laying down, and to explore the materials using their whole bodies rather than being confined to a chair. The team had discussed Amy's drawings during their daily reflections, and following this, a small vase of flowers was set up in Amy's corner of the studio especially for her.

While the other children continued to develop their ideas using clay, or explored the resources provided for drawing on the floor, Amy worked independently on her drawings (Figure 10)



Figures 9 and 10 – Amy drawing in the studio on Day 2 and Amy's studio drawing from Day 3

⁶⁶ Fein, G. (1985) *Learning in play; surface of thinking and feeling* in Frost, J. and Sunderlin, S. (Eds) *When Children Play* (Wheaton: Association for Childhood Education International)

Day Four: Adventuring with friends



Figure 11 – Playing with friends at the garden on Day 4

As on the other days, Amy took part enthusiastically in the variety of exploratory activities on offer at the Botanic Garden, chatting happily with others as she explored the glasshouses with a small world elephant she had chosen, interacting with adults, children and their toys (figure 11).



Figure 11 and 12 Amy working in the journaling area and Amy's oil pastel drawing from Day 4

Once back in the school garden again, Amy locates the 'journaling' area (Figure 12), which the adults had created in response to having observed that on previous days, some of the children wanted to add photographs and drawings to their journals. On the previous visit to the Botanic Garden, the journals were used indoors, but this was seen to segregate the group, and we felt that an outdoor area would provide more potential for the children to be able to access the range of activities rather than feeling like they needed to decide between an indoor or an outdoor option. The area is stocked with photographs from previous days, glue, sellotape, scissors, oil pastels and pens. Amy chooses to stick a photograph in her journal (showing her drawing in the Schools Garden

on Day One) and adds some more 'circle and stick' drawings using brightly coloured oil pastels (Figure 13).

Day Five: We're Going on a Bear Hunt

The children had been in the museum for around 45 minutes, and in Gallery 5 (Nineteenth Century French Art) for about 35 minutes of that time. They had joined in with a retelling of 'We're Going On a Bear Hunt'⁶⁷ moving around the gallery to find paintings like the scenes described in the book. The children were given an opportunity to do some drawing in their journals before returning to the education studio for a snack. Amy relished another opportunity to draw in a new gallery (Figure 14). While other children begin to show signs of tiredness, beginning to fidget and needing to move around the room, Amy seems comfortable to sit on a padded bench balancing her sketchbook on her lap and remains focused for longer than any of the other children.



Figure 14 – Amy drawing in Gallery 5

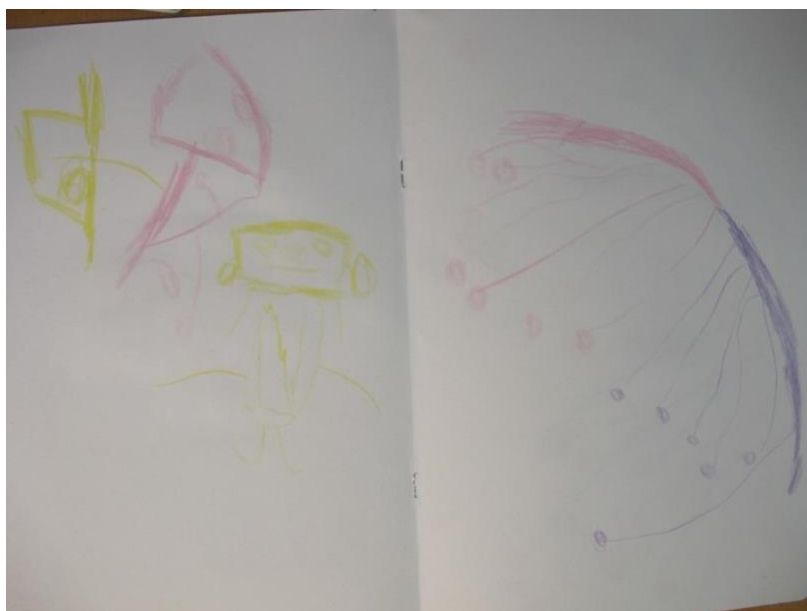


Figure 15 – Amy's drawing from Day 5: "Us. In the Museum. Drawing."

After some more time exploring the museum, we return to the studio and Amy settles into her usual pose- sitting on a chair away from the rest of the group and with her drawing resting on her lap. This time, however, while her picture still includes many flower-like shapes, a new image appears. These images have clearly defined enclosed rectangular shapes and have smaller circles placed within each. One shape appears to have facial features and the larger shape is joined to another shape decorated with lines which could illustrate limbs. (Figure 15).

ME2: 'Is this something from the story?'

Amy: 'No, it's us. In the museum. Drawing.'

⁶⁷ Rosen, M & Oxenbury, H (1989) We are Going on a Bear Hunt, Walker Books

Case Study 1 Analysis

Making it your Own

Arts Council England (ACE) identified 'developing belonging and ownership' as one of their seven Quality Principles 'to raise the standard of work being produced by, with, and for young people.'⁶⁸ This growing sense of belonging, closely related to increased confidence which we examine elsewhere in this report, can be seen to be the foundation on which children can come to feel ownership of these places, and begin to identify ways in which they can contribute to them.

As this case study demonstrates, it seemed important to the children that they were able to make or create things in the garden and museum and also that they were able to take these away. Giving children control over what to make or create helped them to identify aspects of their experience that were of particular personal significance and to take ownership of it by transforming it through artistic representation.



Figure 16 – a page from Amy's journal

⁶⁸ www.artscouncil.org.uk/quality-metrics/quality-principles

Both having the experience and then representing it seem to be important in developing Amy's metacognitive understanding of her relationships with these different spaces. Being able to exercise some agency at both experiencing and representing stage helped her to position herself as being in control of her learning.

Amy's drawings are important not only as 'souvenirs' of her visit, but they are experiences in themselves. They are a way of Amy bringing herself in to the spaces. When given a choice of photographs to include in her journal, Amy picked out images showing her engaged in drawing activities (Figure 16) which indicates that she was not only interested in the finished pictures themselves, but also the process of creating them. Making the drawings and taking the photographs are seen as of equal importance to seeing the collections when she reports back on the visits to her family:

Amy told me how she had drawn flowers at the Botanical Gardens and how they had seen a grey squirrel and that NP1 had helped her take a photo...Following her trips to the Museum she has told me that they saw lots of paintings and plates and bowls (including animals on plates!) and a big staircase...She told me she took lots of photos with NP1.

Follow up comments from Amy's mother

Flowing into Flowers

It is interesting that she explains her drawings as flowers to her family. Although throughout the project the adults noticed and discussed Amy's drawings as being of flowers, upon reviewing the data we were interested to note that at no point in our recorded data do we hear this from Amy herself. Perhaps in our enthusiasm to understand what Amy's drawings were telling us about her experience of our collections we may have rushed to conclusions, or perhaps this is an example of the entanglement described by Birch (2018)⁶⁹ in which meaning is created as adults, children and artworks become enmeshed together – the environment of the Botanic Garden, and the Dutch Still Life Flower paintings are exerting their influence not only on Amy as an artist, but on the practitioner-researchers as well. We are almost compelled by our context to understand the drawings as flowers.

If Amy herself had explained her drawings to us then this might have helped to clarify our understanding, but as seen above, despite numerous questions and prompts, Amy gives only very minimal answers to the adults' questions. She continues to draw throughout, suggesting that she is so deeply involved and engaged with the processes of looking and drawing that she is almost unaware of what is happening around her. The combination of her initial curiosity, the encounter with objects of personal interest, followed by an opportunity for involvement through drawing (an activity requiring not only sensory, intellectual and emotional involvement) leads to the conditions for a 'flow experience' (Csikszentmihalyi and Hermanson, 1995)⁷⁰.

⁶⁹ Birch, J. (2018) *Museum Spaces and experiences for children – ambiguity and uncertainty in defining the space, the child and the experience in Children's Geographies* DOI: 10.1080/14733285.2018.1447088

⁷⁰ Csikszentmihalyi, M. and Hermanson, K. (1995) *Intrinsic Motivation in Museums: Why Does One Want to Learn?* In Falk, J. and Dierking, L. (Eds) *Public Institutions for Personal Learning* (pp. 67-77) (Washington DC: American Association of Museums)

Visual Communication

Interestingly, when reflecting about this episode two weeks later, NP1 described Amy as 'communicating so much' about her drawings. It could be that rather than misremembering how little Amy had actually said verbally, she was recognising the depth of engagement and the significance of these moments to Amy and her sense of self within the museum and garden experience. Throughout the week, Amy returned to this drawing process repeatedly, always starting a new page rather than adding to the previous days' work in her project journal.

The adults were really interested in Amy's drawings, and they featured often in our reflective discussions. We were interested in the way that although her drawings seemed to have some similar features, they changed and evolved over the week. We found this fascinating, even though we could not match the marks she made to particular meanings. Whether outdoors or inside, in the public galleries or tucked down in the basement education studio, Amy used drawing as a way of understanding and responding to her experiences.



Figure 17 – Children drawing on the gallery floor

Drawing also demands a particular physical positioning. Some of the other children liked to lay on the floor to draw (Figure 17), or improvised desks using gallery benches to achieve a comfortable drawing posture. On Day Three, the group settled into a small bay in the Ceramics Gallery and were invited to take part in some mark making activities together. Harry said, 'I need a bench,' and began looking around for some seating, perhaps remembering how he had positioned his body for drawing on the previous day. Amy, however, had a characteristic way of working often sitting leant forward with her sketch book balanced on her lap. Again, this was something the adults remarked on, with NP1 describing how Amy 'would take up her position', miming Amy's straight-legged posture, and GE1 noting that Amy had a 'special drawing den' in the studio, referring to the two chairs facing each other which she used to sit in.

Implications for Future Practice

We can see here that although not yet four years old, Amy is engaging at a deep level with our collections and spaces. It seems likely that her drawings show either flowers or some kind of botanical feature, given their appearance and the context. The representation of plants and flowers in drawing and painting has a long history in both visual art generally, and the specifically within in the Fitzwilliam Museum collection, and also in plant science. In fact, Amy made this connection herself following an interaction with ME2. Having seen her 'string snake' drawing, ME2 explains that there are also plants that curl like snakes. When the group is reminded that they are to visit the Botanic Garden the next day, Amy says that she will see the curly plants. Through her own personal meaning making, Amy is tapping into this rich scientific and cultural heritage. We should not underestimate young children's ability to engage with our collections and to develop this relationship as part of their own personal narratives.

While drawing, much of Amy's body is completely still and she seems almost unable to communicate verbally, despite being very chatty and physically adventurous at other times, so we know that this is not due to a lack of ability, but an issue of deep engagement. Similarly, other children's mark making also provided insights into their ways of thinking: both Barney and Harry were intrigued by the central fold in the middle of their sketch books, drawing a line all the way up and down it, then turning the page to repeat the same mark.

In the same way that Amy developed her ideas when given time and space to continue mark making in the art studio, Harry and Barney seemed to have particular fascinations that they wanted to explore through their drawing. The idea of being able to repeat the same mark again and again delighted Barney, and when he was introduced to print making he became engrossed, spending around thirty minutes filling his sketchbook with prints. His key worker was next to him throughout, and guided and encouraged him as he worked, but as above, when he was very focused on his art making it was hard for him to respond verbally at the same time.

Harry's experimentations with extending a line as far as possible could be seen not only in his mark making, but also in his physical engagement with spaces. When arriving in a new spot, either in the Garden or Museum, Harry could be seen to stretch himself out along any available bench, exploring the extremes of how far his body would reach and connect itself with this new place. When drawing paper in the studio was arranged so that it draped down off the table and onto the floor, Henry again began to explore the idea of length and edges, drawing up from the point that the paper touched the floor to the top of the table, 'up.. and down,' he said as he drew the line. Then Harry and Charlie realised that the paper had not been unrolled as far as it could have been. The two of them worked together to extend it to the limits of the room, Harry again stretching his body out at the same time (Figure 18).



Figure 18 – Harry and Charlie exploring how far they can extend

It is important to acknowledge the many different ways that children have of engaging with and communicating about their experiences in addition to verbal language, and we need to find ways to ensure that these are enabled, valued and heard in our practice.

The professional conversations that emerged as part of this project were an important way of doing this – triangulating our responses to the children and their activities as individual researchers meant that each of us were able to highlight episodes that felt significant, which others may have passed over, either preoccupied by something else, or failing to recognise that this was an important moment because of our own preconceptions.

Had this been a one-off visit rather than a week-long residency, Amy would not necessarily have had the opportunity to develop her drawings as she has done here. Repetition is crucial to memory making and also as a bridge to new experiences. In their observations of T and his repeated experiences with the stairs in the Streetlife Museum of Transport, Macrae et al. (2017)⁷¹ suggest that:

*'Steps always remain as a memory site that can be revisited in another step-encounter, each step-encounter thus becomes the holder of the remembered experience of past encounters.'*⁷²

These drawing experiences are not contained within the residency itself, but reach out beyond it, both as physical artefacts (drawings) and as embodied memories (the acts of drawing). This is a

⁷¹ Macrae, B., Hackett, A., Holmes, R. and Jones, L. (2017) *Vibrancy, repetition, movement: Posthuman theories for reconceptualising young children in museums in Children's Geographies* DOI 10.1080/14733285.2017.1409884

⁷²

way in which the experiences of the museum and garden continue to be enfolded within Amy's current and future meaning making. Through drawing, these places have become absorbed into her sense of self and self-expression: she has taken ownership of them in a creative and personal way.

This case study demonstrates how drawing is a serious enterprise for Amy and a way of exploring and communicating her experience. The opportunity and freedom to repeatedly return to the same motifs and spaces as part of the meaning making process seems to be of great value. Amy's careful observation, exploration and rigorous documentation is reminiscent of scientific and artistic traditions of slow, close looking ⁷³ and is in keeping with the multi-disciplinary research focus of the both the Museum, the Botanic Garden and the wider University of Cambridge Museums. Amy's early explorations lay the foundations for future research and investigation in the world around her.

⁷³ Tishman, S. (2017) *Slow Looking: The Art and Practice of Learning through Observation* (New York and Abingdon: Routledge)

Case Study 2 : “Don’t..Write..On The...Plants!”

Understanding how museums and gardens work

It was the second visit to the Botanic Garden, and the fourth day of the residency. For the initial part of the visit, the children had spent around half an hour in the glasshouse range. The adults guided the children through the variety of different habitats displayed: ‘Continents Apart’ (Temperate House), ‘Mountains’ (Alpine House), Oceanic House, ‘Tropical Wetlands’, ‘Tropical Rainforests’ and finally into ‘Arid Lands’. The children had been chattering excitedly to each other and to the adults, helped by the activity that shaped the visit to the glasshouses: having a small world character to show around (Figures 19 & 20).



Figure 19 and 20 – introducing a small world character to the Arid Lands and making some new friends

In the Arid Lands house, the children are reminded not to touch the plants as many of them are very spiky. Some of the children took the opportunity to have a brief rest in this house by sitting down on a bench, while others used their small world characters to explore the ground and the rocks that help to create the landscape for these plants. Alanna has been looking intently at one of the plants for a few moments, and calls to ME2 to look at it with her. She indicates the leaves, makes a sad expression and looks back to ME2 to check her reaction, saying, ‘Look!’ She has been looking at a large plant which had graffiti scratched into it, leaving white scars on the leaves.

Alanna was saddened to see the writing scratched into the Aloe Vera leaves. “Poor plant!” she said, stroking it. ME2 told her the writing showed a name: Maggie. She highlighted this to NP2, and who came over to have a look as well. Alanna said, “That was nasty. Maggie did it. Which Maggie? Poor plant.” ME2 suggested that perhaps we needed a sign telling people not to do this. Alanna moved towards a nearby information panel. She pointed at it, moving her finger from left to right and said slowly, as if reading, “Don’t..Write..On The...Plants!””. (Museum Educator field notes)

Case Study 2 Analysis

Signs that Make Sense

The children showed from the very first day of the residency that they were aware of the use of labels and signage in the garden and museum. They understood that text carries meaning and that within the context of the garden and museum, the texts were there to offer support and guidance to visitors about what to do and what to expect. For example, when the group noticed a badger footprint in some sticky mud in the Botanic Garden, the children logically surmised that the nearby plant label was most likely to be some kind of warning to badgers or others who might slip in the mud: 'That sign says, "No Walking Through"'.

Making Sense of Signs

Being unable to read the signs, rather than excluding the children from the information they contained, in fact brought with it a sense of creative ownership – they could make the words say whatever they needed them to. By taking ownership of the texts, they were able to use them to create their own meanings in the museum and garden. We can see this in the above description of Alanna. She feels involved at an emotional level with the Botanic Garden and its collection, displaying clear signs of sadness about the damaged plant, and this makes her want to take action. While she may not actually be able to put up a sign and write her message on it for others to see, her pre-literate status means that she is able to read her message *onto* the sign. Reading for Alanna is an active and creative process that allows her to make the sign mean what she thinks it should.



Figure 21 – Using text to make meanings

Understanding that reading labels is a way of negotiating one's relationship with a museum/botanic garden space was a way in which the children demonstrated that they felt at ease with the conventions of the spaces. Again in the glasshouse range, there was some discussion among the group about an Indian panel painting that was being exhibited as part of a special series of events across all the Cambridge University Museums:

Charlie pauses in front of the picture and checks with NP3 about what it is.

Ewan asks again, 'What is it?'

NP3: 'It says it's...erm...god-like figures on horseback. Do you think they look like gods?'

Ewan: 'Yeah.'

Lucy picks up on NP3's lack of certainty about how to talk about this particular object. Trying to help her out, she makes eye contact with NP3 and when she has her attention, directs it to the nearby information panel. 'Read on there,' she suggests.

Lucy shows that she has come to understand the role of written texts in helping to construct meaning in these places. Perhaps owing to the fact that she has only learned about these things recently herself, she recognises that this knowledge is not necessarily intuitive or universally-held. She suspects that NP3 might not be aware of how to use the information panel, and so points it out to her to try to help.

Clarkin-Phillips et al. (2013)⁷⁴ also found that the children attending the kindergarten in the basement of the Museum of New Zealand Te Papa Tongawera, who took part in regular visits to an art exhibition there, quickly became aware of gallery conventions with regard to information labels. In their project, and in ours, the children were often seen to ask the adults to read labels to find out the names or other information about objects. They are aware that this is a place in which one learns together. The necessary information may not be held by the adults: instead the child, adult, objects and labels need to come into dialogue. Unlike other texts that children ask adults to read, it is quite rare that the adult simply reads the whole label to the child without comment. Instead we see a more dynamic exchange in which the adult builds on his or her knowledge of the child to translate or mediate the message, adjusting and adapting as they react to the child's response. Meanwhile, the child receives messages about how he or she is perceived by the adult in terms of how they appear to interpret information from the label. New knowledge is being co-constructed on a variety of levels.

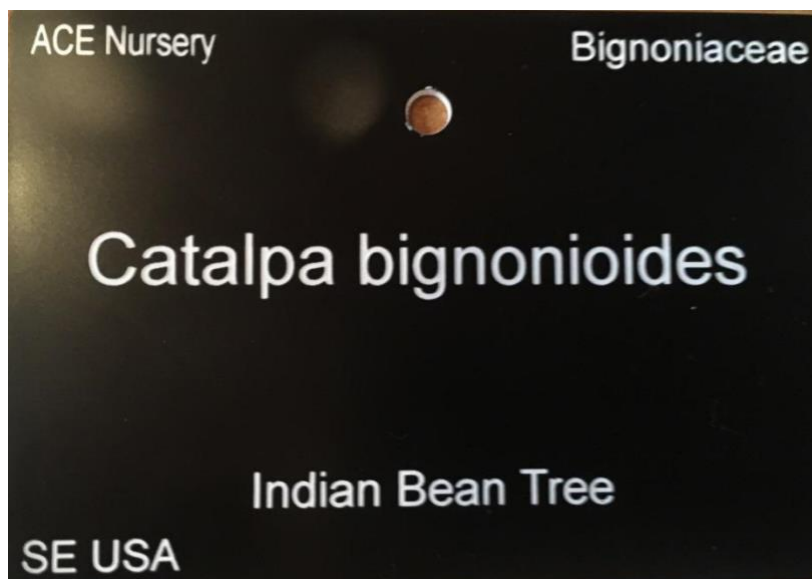


Figure 22 – Label for a tree in the nursery garden

Charlie, Amy and Lucy were all interested in the plant labels in the glasshouses, asking 'what does that say?' a number of times. NP1 used this as a way to connect back to nursery literacy activities, helping them to spot familiar letters ('your letter'): that is to say, the initial letters of their names and those of their friends, creating symbolic personal connections with the displayed text. Garden Educator 3 (GE3) gave the children a different type of knowledge about the labels, explaining the format which always shows the name, origin and date of the plant in the same position. At the end

⁷⁴ Clarkin-Phillips, J., Carr, M., Thomas, R., Waitai, M. and Lowe, J. (2013) *Stay Behind the Yellow Line: Young Children Constructing Knowledge from an Art Exhibition in Curator-The Museum Journal* Vol. 56, No. 4 (pp 407-420)

of the residency, the Botanic Garden produced a label in this exact format for the tree in the nursery garden. This was a way in which children were encouraged to consider how the nursery and museum/garden environments might seem to connect with each other in meaningful ways, and hence how an attachment to, and familiarity with, one could extend to a feeling of being at home in another.

This case study demonstrates how meaning is co-constructed as part of an active dialogue between child, adult and institution. Very young children pick up these conventions but they play with these to create their own meanings and narratives.

Case Study 3: Freedom and Control

The challenges of exploring museums and gardens with young children

Entry

It is the very first day of the project. The children and Nursery Practitioners have travelled in taxis from ACE Nursery to the Botanic Garden. Eight of the children and two of the adults are sitting on or standing near a bench at the entrance. Lyla and NP3 sit separately on a different bench, holding hands. The Museum and Garden Educators approach, greet the group and GE2 says, 'Are you ready for an adventure?' The children murmur uncertainly and Barney and Ewan look quite nervous. NP1 echoes, 'Are we ready for an adventure?' and the whole group starts moving from the benches to the school garden.

While some of the children move quickly, with Jo at the front holding hands with NP2 and chatting confidently to her, others take their time, either to take in the surroundings or because of feelings of anxiety. Lyla and NP3 remain at the back of the group holding hands. Charlie also stays near the back, reaching for Alanna's hand. Having rounded a corner, the group can see GE1 who is waving from the Schools Garden Entrance. Barney and Ewan start to run to her straight away. NP3 says to Lyla, who does not show any signs of wanting to run,

'Lots to take in, isn't there, Lyla?'

Having seen GE1, and the other children starting to run, NP2 says to Charlie:

'Shall we walk closer to her? You can run too. Run! You run!'

Charlie and Alanna start running, but keep their place in the group, stopping rather than overtaking others, and waiting for the adults to catch up. NP3 says to Charlie,

'Boots too small? Do they fit well?'

Charlie starts running again, and is told, 'You can run, good!'

On the second visit to the garden, the group is more evenly spaced across the two benches near the entrance. Ewan, Lucy, Lyla and Alanna occupy one bench, Charlie, Harry, Amy and Barney sit on the other. Jo and the adults stand nearby. When the Museum and Garden Educators approach, both Jo and Alanna move towards them to initiate conversations. When moving to the Schools Garden, Lyla walks independently rather than holding hands with an adult. Amy, Charlie, Harry and Barney run ahead of the adults, and Lucy also starts running.

Rounding the corner, as on day one, the Schools Garden is in sight. NP2 asks Lucy,

'Do you want to run too, Lu? Or walk with me? Walk. OK.'

The Lift

It is the second visit to the museum, and the third day of the residency. The group is moving from the Education Studio in the basement to the galleries on the ground floor to start their time in the museum. The children have been told that they may choose to use the lift or the spiral staircase. NP1 is holding hands with Barney at the bottom of the staircase. He has been clear that he would like to use the stairs. Lyla stands between the stairs and the lift.

NP1 asks : Do you want to go in the lift, Lyla?

NP1 and NP3 watch her facial expression.

Alanna: I want to go in the lift.

Alanna walks past the others towards the lift. Lyla moves her head, but it is unclear what she means.

NP3: Do you want to go in the lift, Lyla?

NP1: No? Do you want to come with me on the stairs?

NP1 reaches to take Lyla's hand.

NP1: OK. We'll go up the stairs.

Jo appears in the threshold.

NP1: Jo, do you want to go in the lift?

Jo walks towards the stairs.

NP1: The lift's that way. Go that way.

NP1 points to the lift.

NP2 takes Jo's hand and takes her to the lift.



Figure 22 – waiting for the lift to arrive

The Revolving Door

Day three of the residency, the second visit to the Museum. The group have spent around 40 minutes in the museum galleries and are in the process of moving back to the Education Studio for a snack break. They travel through the main entrance to the Museum, which is accessed from the outside by a revolving door. Jo, Alanna and Barney move into one of the door's compartments and look to ME2 for an explanation.

ME2 indicates the edges of the door and says,

'It's got these finger-trappers and is really heavy so it's a bit tricky. Look somebody's coming in! Let's go to the side because this lady's going to show us how the door works. She'll be very surprised to see all us waiting here, won't she!'

ME2 moves backwards taking Jo by the hand, and the other children all move back from the door too.

'Let's come over here so she can get in...Here she comes! Lucky lady! She's got a welcoming committee!'

The adults chuckle as the children are all standing just inside the door in a long row, watching silently and waiting for the visitor to arrive.

As the visitor enters, NP3 says, 'it moves! ', and GE2 comments, 'it spins around!'

ME2 explains that this is the way in for people who visit the museum individually. Jo gets back into the door and pulls on the handle. ME2 says, 'you have to be very strong.'

Another visitor approaches who wants to leave the Museum. She stands to one side while Jo is experimenting with the door. When ME2 notices her she says to Jo, 'Someone wants to go out,' and takes Jo's hand to bring her out of the doorway. ME2 apologises to the visitor,

ME2: Sorry, are you trying to get out?'

Visitor (smiling): I'm alright. [To the children] Shall I show you?'

ME2: 'Would you like to see the door work?'

The visitor pushes the door very slowly and the children watch it move and spin. The woman waves to them through the glass as she leaves. Another visitor follows after her and the children continue to watch.

ME2 crouches near the children to explain how part of the door is always shut to keep out bugs that are not allowed in the Museum. Charlie asks, 'Is fishes allowed in the museum?'

ME2: 'Only the pretend kind.'

ME2 brushes the floor tiles with her fingers, saying, 'Have you seen this floor is made out of little bits?' Meanwhile, Jo has made her way back into the revolving door and begins to push it round. NP2 quickly follows her in. One by one, all the children take a turn moving the door around (Figure 23).



Figure 23– the children experience moving in the revolving door

Exits

The group are nearing the end of their first visit to the Botanic Garden, and it is time to leave the Schools Garden and walk back to the main gate to meet the taxis. NP3 remarks, 'What an adventure we had!', as the children assemble themselves into pairs lined up one behind the other, gently guided into place by the adults.

Amy resists holding hands with any of the group, and instead positions herself near GE1 and together they join the line, followed by Jo who did not find a partner or get into the line when first instructed, but sought out GE2, holding her hand and showing her the stone that she has had since she arrived at the garden. The group move out of the Schools Garden onto the main path in a line, with the majority holding hands in pairs or threes. Ewan spots a leaf on the ground and tries to pick it up, but has some difficulty as he continues to hold onto the hand of his partner who has not noticed Ewan has stopped so he is pulled along as he reaches for the leaf. Outside the gate the children wait on the path to be invited into the taxis and strapped in by the adults (Figure 24).



Figure 24 – returning to Nursery in the taxi

On the second visit to the Garden (Day Four of the Residency), the children are not assembled into a line, or asked to hold hands when it is time to leave. By contrast, the group is spread out much further, all the children start running with the first members of the group around 30-40 meters away from the back. NP2 and Lyla hold hands and skip together. This time the children do not wait to be taken out of the gates into the taxis and try to leave the garden independently (NP1 says 'No, we need to wait for everyone,'), but once they are out of the gate the children want to climb straight into the taxis.

Case Study 3 Analysis

Freedom and Control

Despite the many challenges of working within shared public spaces, which are also University teaching collections, with young children, the Museum and Garden were conceptualised as places of freedom and exploration, in contrast to the safe environment of the nursery.

The language of ‘adventure’ and ‘exploring’ was used by adults to describe the activities that would take place in the residency and this was sometimes juxtaposed with what might happen at Nursery. In the description of the first exit from the Garden, above, the children are physically reassembled back into ‘nursery mode’ by being put into a line and walking back to the gate in pairs. Although the Nursery Practitioners needed to prepare the group for a sharp reduction in adult to child ratios as they moved from the Garden back to the Nursery, this was not only an issue of safety concerns. The children had already been moving through the garden (and along this same path) in a much less structured way, so this seemed instead to be a way of preparing their bodies (both adults’ and children’s) to move back to the nursery space and the different kinds of responsibilities this brought with it. The physical, embodied experience of being in museums for young children has been examined by Hackett (2016)⁷⁵, Piscitelli and Penfold (2015)⁷⁶ and was a key aspect of Dockett et al.’s 2011 study⁷⁷ on co-designing a museum space with young children. The relationship between the messages that educators give children verbally about freedom and exploration, however, are sometimes at odds with the ways in which we seek to control their bodies in spaces which we understand as carrying an element of risk.

Differing Expectations

There were different expectations of the different children in terms of their reactions to new spaces and activities, as we see above. Charlie’s and Lucy’s opportunities to run when entering the Botanic Garden are presented to them very differently. Jo and Lyla are also treated differently when ostensibly being asked the same question – lift or stairs?

The language that NP2 uses when speaking to Charlie about running seems to put him under a degree of pressure. He is told not only, ‘you can run,’ but instructed: ‘Run!’ Running is associated in the minds of the practitioners with freedom, and a lack of restriction. However, in her attempt to convey this sense of freedom to Charlie, NP2 has unwittingly taken away some control over his own physical movements and choices about how to enjoy this space physically, by perhaps making him feel that he has to run.

When it comes to Lucy, however, the opportunity is phrased as a question rather than an instruction. Explicitly offering the option of walking makes the choice not to run much easier for

⁷⁵ Hackett, A. (2016) *Young Children as Wayfarers: learning about place by moving through it* in *Children and Society* 30 (3) pp. 169-179

⁷⁶ Piscitelli, B. and Penfold, L. (2015) *Child-centred practice in Museums: Experiential Learning through Creative Play at the Ipswich Art Gallery* in *Curator-The Museum Journal* 58 (3) pp 263-280

⁷⁷ Dockett, S., Main, S. and Kelly, L. (2011) *Consulting Young Children: Experiences from a Museum* in *Visitor Studies* 14 (1) pp. 13-33

Lucy than for Charlie. In fact, it could be suggested that NP2 is nudging Lucy towards choosing to walk. The options are 'run too' (that is to say, "run with them") or 'walk with me'. Choosing to run could be interpreted as a rejection of NP2 in favour of the other runners, so Lucy may feel compelled to stay with NP2 to avoid hurting her feelings.

It's hard to be certain whether NP2's different responses to the two children are due to the fact that her previous knowledge of them both from the setting is shaping her expectations, or whether her experience with Charlie on Day 1 meant that she took a different approach with Lucy when encountering a similar situation the next time. When discussing this episode with NP2 subsequently, she clarified that the pre-existing relationship she had with the children was crucial here. Her previous knowledge of Charlie meant that she thought he would certainly enjoy the opportunity to run in the Botanic Garden, but would feel nervous to do so without strong encouragement from an adult. This helps to explain her choice of words here that were intended not to instruct but to enable.



Linzmayer and Halpenny (2013)⁷⁸ helpfully bring together Vygotsky's model of socio-cultural development and Gibson's (1979)⁷⁹ theory of affordances to enable an analysis of situations such as this. While the relationship between the path and the child may "afford" running – that is to say that the path is smooth, wide and would support running and the child is physically able to run, the socio-cultural context must also be overlaid here – do the children feel confident to run, what will others think if they do, etc. (Figure 25)

The exchanges with Lyla and Jo about the lift were also interesting from the point of view of expectations and preconceptions. At this moment, the balance of power was shifted towards the Nursery Practitioners rather than the Museum Educators, as, although they did not know the space as well, at this point the important factor is seen to be an understanding of the individual children and their needs.

Figure 25 – a chance to run?

The two girls are encouraged towards different options, although neither child expressed any preference verbally. Jo does seem to be indicating that she would prefer the stairs by moving towards them, but this is not taken into account by the practitioners. The video footage shows that in both cases, only four seconds passed between the first question being asked, and the child being guided into position by an adult.

⁷⁸ Linzmayer, C. and Halpenny, E. (2013) 'I might know when I'm an adult': making sense of children's relationships with nature in *Children's Geographies* 12 (4)

⁷⁹ Gibson, J. (1979) *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin Harcourt)

It seems that the adults are using their prior knowledge of these children and their relative levels of anxiety or confidence to help to guide them. The lift was seen as the adventurous option, whereas the stairs were seen as safer, even though some children (including Jo, who did not like the 'holes' of the open treads) had found the stairs difficult the day before. Knowing the children well means that the practitioners may be trying to pre-empt the children's choices rather than giving them the time to make up their own minds.

Interestingly, on the final day, Lyla did ride in the lift, and her parents reported to the nursery staff that she had talked all about it at home. Seeing the children in new contexts, and also through the eyes of those who do not know them well can be a good way to become aware of these preconceptions, and open up our expectations of individual children. NP1 said that 'Personally, I got to know all those nine children a lot more over the five days'. Enabling the time and space for children and adults to understand each other better is a wonderful gift that museums and gardens can offer.

This is not a Door!

Encountering the revolving door with the group, and reflecting on the video footage afterwards was a very important learning moment for ME2. Having worked in the Fitzwilliam Museum for many years, she knows that groups (especially those containing children) are not to use the revolving door. This is for reasons of safety and also practicality as it takes much longer for a large group to get through a revolving door than an automatic one.

The members of Museum Staff working on the entrance desk near the revolving door also share this institutional knowledge, however, they equally have an understanding that if members of the Education Team are accompanying a group, then they will take responsibility for them. This meant that although they smiled and acknowledged our presence, they did not intervene. Had the group been visiting independently, the desk staff may well have explained to the group that they were not to use the door, assuming that they would not have known the 'rule' otherwise.



Figure 26 – the children try to understand whether they can use the revolving door

Using an alternative door for groups is so ingrained in the way the Museum Educators work on a daily basis, that in the above episode ME2 tried a number of different strategies to keep the children away from the door (moving them back, suggesting that they watch other visitors use it,

trying to distract them by drawing the focus to the mosaic floor) without even considering whether they should go into it! The Garden Educators and Nursery Practitioners may or may not have been aware of the rule about groups using the revolving door, but they were looking to the Museum Educators for guidance, and taking their cues, as throughout the project, the balance of power was always shifted towards those who were working in their familiar location.

However, when Jo finally managed to get into the door and move it round, ME2 suddenly became aware of her own blocked thinking. Jo's curiosity and determination (a number of her initial attempts to use the door were thwarted – by the very adults who had declared that we wanted to her to be able to explore the museum building!) was what freed the adults to think about the door in a new way. Rather than a blanket 'no', it was possible to find a way to use the door safely and not to cause a problem for other visitors. But beyond the simple question of the door itself, this episode made us realise that when working alone, or even in collaboration with colleagues who have similar backgrounds, training and expertise to ourselves, we can be limited by our shared perspectives. To think in new ways, we need input from those with more diverse experiences, including young children, who can offer us completely fresh ways to encounter spaces and objects that are very familiar to us.

Case Study 4: 'Look! I've got a stone already!'

The Power of Objects

On day one at the garden, Jo was the first child to initiate an interaction with one of the less familiar adults. The children sit in a group on two benches at the entry to the garden. As GE2 approaches the group to introduce herself and the events of the day, the other children remain seated staying close to the nursery practitioners. Jo stands up, walks over to GE2 and says, 'Look! I've got a stone already!' She takes a small stone from her pocket to show to GE2. Having introduced her stone, and having been told that the group is going to have an adventure in the garden, Jo takes the hand of GE2 and walks with her at the front of the line through the garden, chatting along the way.

Once the children have reached the Schools Garden, and been given a collecting bag (around 10 minutes later), Jo remembers her stone, removes it from her pocket and suggests 'Rocks' as something that we might want to collect when we walk around the garden. Within moments of starting the walk, Jo finds a tiny pompom left over from a previous craft activity in the garden. She shows this to the nearby adults, and then puts it into her bag (Figure 27).



Figure 27 – Jo and her collecting bag

The next day at the Museum, the filled collecting bags are set out in the Education Studio as the children have an opportunity to combine clay with the natural materials they collected in the garden to make a still life composition. Jo makes a sculpture by pushing feathers, sticks and shells into a piece of clay, and adds the tiny pompom (now wrapped in a layer of clay) from her bag, ignoring some of the other leaves and twigs she collected.

When it is time to leave the Museum, a Gruffalo puppet which had been used during part of the session needs to be returned to the members of staff on the front desk. Jo takes the puppet from ME2, to return it to the Visitor Services Attendant herself, using it to have a brief conversation about what they had done in the museum and to find out where the Gruffalo would be kept now (Figure 27).



Figure 27 – chatting with Visitor Service staff about the Gruffalo puppet



Figure 28– Jo's clay work

On day three, the children are able to develop their clay work further during the art-making section of their visit. On arrival at the museum, before the art activity takes place, Jo is distracted from the 'settling in' routines of putting away her coat and listening to the day's introduction by seeing her work out on the art table: 'My clay's still here!' (Figure 28) she exclaims, and spends 3-4 minutes looking at it, touching it and looking at it from different directions. 'That's good to know, isn't it, Jo?' responds NP1.

On the final day, the group return to the museum and while everyone is greeting each other, Jo asks first GE2, then ME2: 'Is this your coin?' She explains that she has found a 10p coin in the taxi on the way to the museum. GE1 crouches down to greet the group. Jo picks up GE1's ID card, hanging on a lanyard round her neck, turning it over in her hands, while GE1 explains what it is. Having gone downstairs to the education room basement, Jo asks again, 'Is this your coin?', and tells GE1 the story about finding the coin in the taxi.

Making Transitional Objects Together: Documentation and Journals

When planning the project, all the educators were keen that the residency should make sense to the children in terms of their previous and ongoing experiences, and that they should be enabled to create interesting connections themselves between the Museum, Garden and their home and nursery lives.

In their work with the National Museum of New Zealand Te Papa Tongarewa and its Kindergarten, Carr et al. (2012)⁸⁰ also used what they call ‘boundary objects’: laminated photographs of exhibits, sketch books and teacher-written learning stories to move between museum, classroom and home as a way of enabling the children’s learning to develop between one place and the next.

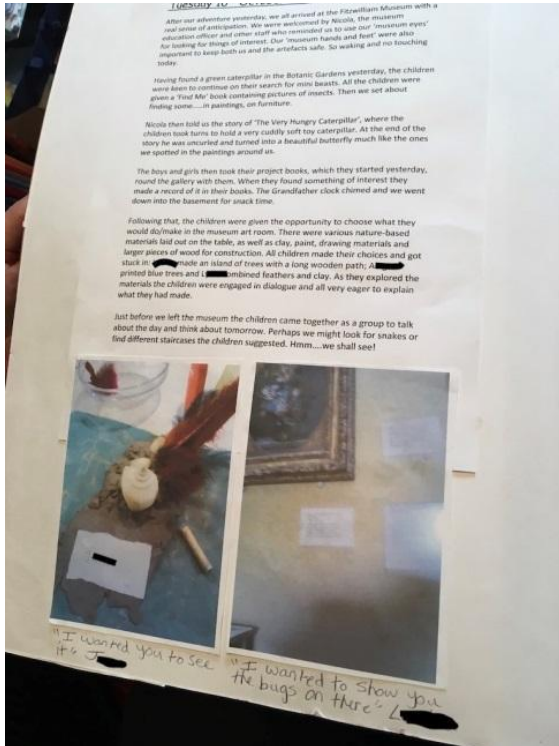


Figure 29 – The Nursery Project Journal

In the same way, in this project, photographs of the Museum, Garden and of the project team were sent to the children in advance of the residency to build some familiarity in advance. Also, each child’s project journal, and their 3D artwork, was moved between the Museum and Garden on each day to provide an element of continuity to the children’s personal journeys.

In addition, the Nursery Practitioners used a large version of these journals to document the children’s learning and thinking (Figure 29). This book was used to bring the experiences from the Museum and Garden into the Nursery in order that they could be shared with other children and families. Some information was also shared electronically in the form of a blog for the parents of children involved in the project. Having a physical object in which this information was stored was also important as it was something that was accessible to both children, parents, and educators. The journal has also been important in transitioning the learning and experiences from the residency week into ongoing nursery activities, and staff and children have

continued to use it to document the emerging bulbs that were planted on the Botanic Garden visit, and other work which has been inspired by the residency.

We also aimed to include transitional objects/experiences in the residency activities themselves by incorporating stories or ways of playing with which the children were already familiar to act as a bridge into the less familiar spaces and collection objects. The field notes of both Museum Educators and Nursery Practitioners indicate that this was successful:

‘Linking familiar stories worked well as a way of setting the scene and relaxing them.’
(Museum Educator Notes)

‘Using a familiar story really enhanced their communication and supported their confidence when moving onto other activities.’
(Nursery Practitioner Notes)

⁸⁰ Carr, M., Clarkin-Phillips, J., Beer, A., Thomas, R. and Waitai, M. (2012) Young children developing meaning-making practices in a museum: the role of boundary objects in *Museum Management and Curatorship* 27 (1) pp. 53-66

Animating Objects

On day four of the residency, the second visit to the Botanic Garden, the children were all invited to choose a small world character to show around the glasshouses. The aims of this were multi-layered:

- *The glasshouses include some delicate and some spiky plants which should not be touched. Holding the toys meant that the children's hands were occupied.*
- *Many of the toys were familiar animals or toy characters that the children recognised, and so it was hoped that they would feel an easy connection with them, and that this was a piece of home/nursery in the Botanic Garden*
- *We had noticed that the children were beginning to create narratives around particular objects, and thought that the toys would be useful props to develop this*



Figure 30- the small world toys enabling interactions in the glasshouse

Adults were invited to take a small world 'friend' as well, ostensibly to model how to use these in the glasshouses. However, what we noticed was a sudden increase in volume and excitement, as not just the children, but the adults as well, seemed to grow in confidence and felt enabled to start interactions through their toys (Figure 30).



Figure 31 – Lyla & ME2 share a moment of connection through the small world toys

By giving the toys a 'voice', children and adults now had a new way of talking about and interacting with each other and the collections. Lyla, was very quiet and did not communicate verbally with others, either at nursery or during the residency week, was able to use her toy to initiate and continue interactions with other people and the collection objects in the glasshouses (Figure 31). Children and adults alike felt a renewed sense of confidence in interacting with the objects and spaces. Using the small world resources as proxies or tiny, invincible representations of parts of ourselves meant that through them we could go to new places that would not have been possible for us otherwise.

Case Study 4 Analysis

Ways of Being Confident

Before the residency week began, both the Nursery Practitioners and Museum Educators in their pre-project questionnaires predicted that the experience of spending a week between the museum and garden would increase the children's confidence, and this seemed to be confirmed, both in the follow up interviews and when analysing the video data. For all the children other than Jo, we saw a development through the week from reticence to confidence.

I think some of them grew in confidence particularly. If you look at Lyla...the difference when she started to engage in an environment different from here...she was leading them down the stairs, was leading them through the hedge in the Botanic Garden. That's something we haven't seen from Lyla here at nursery. NP1 post project interview

NP3 also mentioned Lyla in her post project interview when she was asked for her most memorable moment of the week:

Lyla's journey – when she took her shoes off for foot painting on the final day – she wouldn't've dreamt of doing that on day one, would she?

Comparing the children's movements, physical and vocal responses to entering and moving around the spaces on the first encounter to the second and subsequent visits shows how quickly the other eight children (and to an extent, the adults as well) moved from a state of anxiety, concern or trepidation to confidence, enthusiasm and a sense of belonging.

Confident from day one – using transitional objects

Jo, on the other hand, was outgoing and confident both physically and socially throughout the project. She was often the first person to enter and new spaces, and the first to make contact with new adults (including those not directly connected with the project).

Using the stone on the first day was a way of breaking the ice with GE2 and linking together a previous experience (having found it) with the present one. The 10p coin and GE1's lanyard also acted as 'gateway' objects – Jo uses them to create an instant connection and to start interactions. Having the stone acknowledged as something significant by GE2 was perhaps also important in Jo's successful transition into the first day of the residency.

Similarly, seeing her clay work still in place on day three seems both important and fascinating to Jo, and could well increase her sense of belonging in the Museum. Crucial to this though, is NP1's acknowledgment of Jo's feelings at this point. By saying 'That's good to know', NP1 demonstrates and understanding that for Jo, having objects that connect different experiences together is an important way in which she builds meaning.

Giving something of oneself

For transitional objects to have meaning, they must have personal connections and value to us. The objects that Jo presents to the group at key moments such as arrivals and transitions are more than just comfort toys. If this was their only meaning then she may well have left them in her pocket to return to as needed. The fact that she uses the objects as a way of introducing herself to, particularly the adults in the group, is a way that she tells us that she is prepared to offer something of herself to the place and to the relationship. Although she does not offer the stone as a gift, her enthusiasm to share having brought it sets the tone for a free exchange of ideas and personal narratives in her relationships during the residency.

The Nursery journals, sketchbooks, photos, children's art work and project blogs enabled the project team to create tangible and relevant transitional objects which helped to link the individual experiences of the group together and co-construct narratives of the shared experience. This seems especially relevant within the context of the museum and garden collections of 'special' objects. In a dialogic approach to museum learning described by Burnham and Kai-Kee (2011)⁸¹, everyone involved feels that they have something to contribute to the learning experience through bringing something of themselves to the encounter. This willingness to give and receive, to listen, and to respect people for their 'Otherness' is a feature of the democratic pedagogy described by Dahlberg and Moss (2005)⁸². They call for pedagogical relationships that are relational, respectful and situated. The understanding that children are not unknowing beings waiting to be transformed into knowing ones by our actions, but rather able to bring their own contributions to our exchanges enables new perspectives, and questions the taken for granted.

'[It] is about creating opportunities for seeing matters differently and making loud voices stutter. It should make the familiar seem strange, make visible invisible assumptions and values.' (Ibid., p. 138)

Objects, whether a stone in a child's pocket, a plant specimen in a Botanic Garden or painting in a gallery, are touchstones for these human encounters that offer us windows into this 'strangeness-in-familiarity'. Jo's stone was nothing to any of the rest of us until she picked it up and showed it to us. The way we curate and discuss museum objects is similar. None of us will have quite the same experience of them, depending on so many factors unique to us and our situations, but it is when we share objects together that they become meaningful.

⁸¹ Burnham, R. and Kai-Kee, E. (2011) *Teaching in the Art Museum: Interpretation as Experience* (Los Angeles: Getty Publications)

⁸² Dahlberg, G. and Moss, P. (2005) *Ethics and Politics in Early Childhood Education* (Abingdon: RoutledgeFarmer)

5. What we learnt and implications for future practice

The University of Cambridge Museums Nursery in Residence Project provided us, a group of practitioners from The Fitzwilliam Museum, Cambridge University Botanic Garden and Ace Nursery, with a unique opportunity to observe a small group of young children exploring the museum and garden over the course of five mornings. As part of a practitioner led action research project, we have reviewed, analysed and discussed the data we collected and reflected together on what the case studies reveal about our practice and about working with young children in museums and gardens. We hope that this process and what we learnt along the way will now inform practice within each of our settings and will be of interest to others working within the sector.

5.1 What did we learn about how young children make meaning in a museum and botanic garden as part of a week long residency?

ME2: Whose garden is this then?
Alanna: Ours. Children's

It's possible to achieve a real sense of belonging in a relatively short space of time...every visit they looked like they knew the places and they were theirs' (NP follow up questionnaire)

One of the most significant findings of our project was the way in which the residency supported the young children to **feel a sense of ownership and belonging within the museum and garden**. The case studies provide many examples of how this happened through the many different ways in which the children explored and interacted with our spaces, places and with ourselves as practitioners. We borrowed and adapted simple routines from the nursery setting and made them our own, and this helped the group to feel safe and secure. The repeat visits helped them to build confidence as they knew what to expect, where to go and what to do. DeWitt et al. (2018)⁸³ also report on the increased confidence that resulted from extended residencies. The Arts Council Quality Principles specifically name 'Developing Belonging and Ownership' as a key standard that should guide work for, by and with young people and children. Work seeking to align the Quality Principles with a set of participatory metrics (Arts Council England, 2015)⁸⁴ also acknowledged the role of confidence in enabling individual personal progression. However, it was one of the least explored of the seven Quality Principles within the case studies that tested them (National Foundation for Educational Research, 2015).⁸⁵

Another important finding related to the way in which **both adult and child participants worked together to create knowledge about both the physical spaces within the museum and garden**,

⁸³ DeWitt, J., King, H, Wright, D. and Measures, K. (2018) *The potential of extended cultural residencies for young children in Museum Management and Curatorship* 33 (2) 158-177

⁸⁴ Arts Council England (2015) *Developing Participatory Metrics*
https://www.artscouncil.org.uk/sites/default/files/download-file/CC_participatory_metrics_report_July_2015_FINAL.pdf

⁸⁵ National Foundation for Educational Research (2015) *Using Quality Principles in work for, by and with Children and Young People: Results of a Pilot Study* <https://www.nfer.ac.uk/media/1567/acyq01.pdf>

and the objects and collections contained within those spaces. Spending a prolonged period of time with children gave us this unique opportunity. Together we asked ourselves: Are we welcome? Are we in the way? Are we able to participate? What does this mean? The case studies reveal the sophisticated understandings that the children formed within the different spaces they encountered and demonstrate how multi-layered our interactions with children can be within these settings. This knowledge is constructed in a multitude of ways, not just verbally. Children's meaning making is both active and multimodal as described by Kress (1997)⁸⁶

Children act multimodally, both in the things they use, the objects they make; and in their engagement of their bodies: there is no separation of body and mind. The differing modes and materials which they imply offer differing potentials for the making of meaning; and therefore offer different affective, cognitive and conceptual possibilities. (p.97)

The data we collected provides numerous examples of the children using their bodies, feet, hands stamping, rolling, splashing, running, climbing, sculpting, prodding, wiping, twisting, swirling, drawing and talking. Not all of these actions are encouraged in the formal settings of a museum and botanic garden. This project helped us to find the space and the time to allow these responses to happen. **However, it has also highlighted to us how children can receive contradictory messages from us about the environments we introduce them to.** We will return to this point below when we explore how the project extended our professional practice.

The research has also highlighted an interesting parallel between object-based play and collections. There are many examples within the case studies of how **the practitioners and children used transitional objects to help build confidence, and to create new ways of connecting with museum objects and people.** This seems to be relevant to both adults and children and was especially powerful when both were able to make their own choices about the objects. Placing more emphasis and value on the objects and experiences that children bring to our museums and gardens might be a productive way to develop a better understanding of the relationship between our collections and audiences.

The project has also revealed how **even the youngest children care deeply about our collections.** There are several examples within the case studies of young children demonstrating personal connections with the objects in museums and gardens. Alanna's reactions to the damaged plant show that she feels that she ought to take action in the face of poor treatment of a plant as a thinking, decision-making, and autonomous human being. Waters (2011)⁸⁷ explains that young children and educators will regularly use anthropomorphising play to make connections with the botanical world, and perhaps this is something that museum and science educators could also explore as a way of animating and helping children actively participate with made objects and the natural world. Being able to care *for* the things you care *about* can be a deeply satisfying way for children to express themselves and their identity through their relationships with objects.

⁸⁶ Kress, G. *Before Writing: Rethinking the Paths to Literacy* (London: Routledge)

⁸⁷ Waters, P. (2011) *Trees Talk: Are you listening?* in *Children, Youth and Environments* 21 (1)

5.2 How did the project extend and develop professional practice within the different settings?

The contradictions and challenges we identified within the case studies demonstrate a need to make use of detailed empirical research of this kind to both highlight and acknowledge our blind spots. Albon and Rosen (2014)⁸⁸ highlight what they term ‘critical moments’, where we are able to reconsider what we have previously taken for granted, as a key aspect of the relationships that can develop between young children, adults. Within this study that can also be extended to an examination of the relationship between people, places and objects. A period of sustained engagement with a small group of children, and the opportunity to reflect on our interactions through the research process has exposed some of our preconceptions, our prejudices and habitual ways of working which can now be questioned and improved. The focus on respect for individuals, for relationships, and for the right to make choices within our study enables us to reflect critically on our own practice, not as a self-indulgence, but in a way that acknowledges that as educators we must act as a dialogic community of learners, each enlightening the other with our diverse perspectives. There are definite tensions between control and freedom in the museum and garden context and there could be benefits from being explicit about these and from working together to negotiate how to respond.

Transitional objects such as learning journeys, diaries, and sketch books can be seen as ways to bring the museum or garden into places it would not otherwise reach. In addition to sharing the experiences and learning that have taken place during visits, these can be built upon to inspire future activities and to sustain relationships beyond the duration of the visit itself. In addition, if these can be extended from a record of events into what might be termed ‘pedagogical documentation’, in which the thinking processes of the educators and learners are developed through dialogue with what is recorded, then we will have a rich resource which values and makes visible both the processes and outcomes of our time together in these special spaces.

5.3 Implications for Practice

‘It was such a privilege and I really treasured those moments where we were so many adults and could really be with one child for a long period of time.’

Follow up interview with NP2

We were extremely privileged to have been given the opportunity to work with a small group of children in such an in depth and sustained way. Both during the course of the residency week and through this action research project we have been able to look and listen extremely carefully, immersing ourselves in the data whilst reviewing the drawings, photographs, journals and video recordings. This has been a really worthwhile experience and has given us a deeper insight into the ways in which young children navigate our spaces and places. In the business of our day to day work in the museum, garden and nursery this is a rare and precious opportunity. Our research has also demonstrated that this is still an under-researched area and so we would like to make the case

⁸⁸ Albon, D. and Rosen, R. (2014) *Negotiating Adult-Child Relationships in Early Childhood Research* (London: Routledge)

for other practitioners to undertake projects of this kind. **The challenge now may well be to demonstrate the potential impact of such time and resource intensive work.**

In answer to this challenge, we would argue that this work has important implications for practice both inside and outside the classroom. The project provided all the practitioners involved the opportunity to step back, to observe and to think deeply about our practice. All the NPs spoke at length of the ways in which the project had influenced their practice, in both practical ways (resources, activities) and more personal ways (inspiration, freedom). If such projects are to have lasting legacy beyond the group of children involved in the visits, then it is important that the practitioners are able to take some of the freedom and inspiration they felt and experienced, both as professional educators and also from the children themselves, back into their everyday working environments. The residency week opened our eyes to new ways of seeing the collections and renewed the nursery practitioners' creativity in that they were inspired to explore the familiar environment of the nursery in new ways after the project.

This also applied to the museum and garden educators who were able to work in a much more integrated and collaborative way than on previous joint projects. Taking control of and reflecting on the experiences we had as educators during the residency freed up some of our habitual ways of working. It was not just the children, but also the adults who were given additional freedom and time to explore. However, the study was not without its limitations and it is important to acknowledge these too. On reflection, we would have liked to have provided more opportunities for the nursery practitioners to contribute more actively to the planning cycle and the action research process post project. One of the strengths of this project was that some of the planning evolved from day to day as a result of professional collaboration and reflection in real time. Although the nursery practitioners were able to take part in this to some extent, we would have welcomed an opportunity to invite their reflections in more depth at the end of the sessions in dialogue rather than just written form. We were also aware of how it would have been useful to encourage greater involvement of the families. There just was not enough time to do everything that we wanted to!

Extending museum and garden visits into children's everyday experiences in Early Years Settings needs planning, time and commitment: above all through professional development of staff. One interesting outcome of the project was the way in which the nursery practitioners developed some of the explorations which had taken place in museum and garden back into the nursery setting. There was an ethical imperative to this as the project team were keen that the small residency group would share their experiences with the wider nursery community. The project journal kept by the nursery practitioners showed children who had not taken part in the visits joining in with activities that they planned as follow ups or extensions of the museum and garden activities:

'At the Botanic Garden the children collected leaves and were able to create leaf crowns. We collected so many leaves that when we came back to ACE in the afternoon both the Puffins and Penguins [nursery classes] had the opportunity to use the leaves and also create a leaf crown. H also took a group of children out into the garden to go on a leaf hunt.'

Extract from Nursery Project Journal

These opportunities enabled the group to embed their learning within the nursery setting. **There was also an additional, unexpected outcome in that the nursery practitioners began to**

incorporate some of the ideas and approaches that they had experienced and observed in the museum and garden educators using into their own practice. In the follow up interviews, the nursery practitioners mentioned various ways in which they were going to be developing their provision in the longer term based on their experiences on the project: purchasing new resources and developing ideas they had encountered to use in their art projects, using small world toys as prompts for exploring the outdoor area, and even creating a mini garden in an old bath tub. They were inspired by what they had seen, and the possibilities given to the children, at CUBG and the Fitzwilliam Museum.

Although the residency project appeared to be focused on a group of nine children there is potential here to extend the impact much more widely by focusing instead on the professional development. The Fitzwilliam Museum already runs a week long cultural placement programme for trainee primary school teachers in partnership with The National Gallery and The University of Cambridge Faculty of Education. The programme introduces trainee teachers to creative and cross-curricular approaches to working with objects and paintings. The UCM collections, including CUBG, also provide regular opportunities for trainee teachers to experience education in settings outside the classroom. In addition, both CUBG (mainly through the Royal Horticultural Society Campaign for Schools Garden programme) and the Fitzwilliam also offer training for serving teachers. The Fitzwilliam Learning team also work with trainee teachers and early years practitioners from Anglia Ruskin University and Northampton College. These programmes could be developed now to build upon on the findings of this report. This could have important implications for the development of more effective CPD.

Reflecting on how the project might have an impact on her practice, NP2 told us that she felt motivated,

‘To really take the time with children and really listen to them. When they’re a group of course you try to do it, but I tried even more when I came back. I thought, these children had this gift that we gave them: all this attention. So I tried to do it even more when I came back. Because that’s what children need – to be listened to. And that’s what you did. And we did, that week.’

Follow up interview with NP2

The practitioner interviews revealed how they had been inspired and refreshed by the project and the benefits to their own practice of stepping back and allowing the children to ‘take the lead.’

‘We could see how much those nine children got from it, so actually, let’s branch it out, let’s give this kind of experience to all the children.’

Follow up interview with NP1

This project provides an example of an approach which might help to support teacher wellbeing through providing high quality and reflective professional development opportunities. Sabbatical placements are one of the suggestions put forward in a recent government consultation (DfE, 2018)⁸⁹ as to how to improve teachers’ professional career development. Ongoing training and

⁸⁹ Department for Education (2018) *Strengthening Qualified Teacher Status and Improving career progression for teachers*

development that supports teachers' professional well-being and self-efficacy is a key contributor to improving rates of teacher retention (Foster, 2018)⁹⁰



Figure 32 – children creating their own world in the CUBG Schools Garden

The most significant implication of this project for us as practitioners brings us back to the quote at the start of this report.

'Stand aside for a while and leave room for learning, observe what children do, and then, if you have understood it well, perhaps teaching will be different from before.'

Loris Malaguzzi (op. cit)

The more time and space we can allow practitioners to stand back and watch young children, the more opportunities they will have to develop their teaching. The case studies in this report remind us that young children are capable and intelligent citizens who have important contributions to make to our shared spaces and places. As museum and garden educators and practitioner-researchers we are perhaps in a unique position in terms of our ability to witness and document the complex, multi-dimensional and creative learning of young children that happens in shared spaces. At a time when young children are increasingly viewed and measured through a lens that reduces their ability and achievement to a few narrow domains (Roberts-Holmes, 2014)⁹¹, it is important that the Early Years sector is supported by cultural providers in order to advocate for a wide-ranging curriculum for all children that is embedded not just in Early Years settings, but across the community.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/704942/Government_consultation_response_-_QTS_and_career_progression.pdf

⁹⁰ Foster, D. (2018) *Teacher recruitment and retention in England* (House of Commons Library Briefing Paper, 7222)

⁹¹ Roberts-Holmes, G. (2014) *The 'datafication' of early years pedagogy: 'if the teaching is good, the data should be good and if there's bad teaching, there is bad data'* in *Journal of Education Policy* 30 (3)

The essential role that informal spaces for learning such as museums and botanic gardens might play in supporting Early Years Practitioners and the children they care for to participate actively in cultural and community life is something to articulate more clearly to funders and stakeholders who are trying to understand the contributions that museums and gardens make to their communities. The relationships that develop between young children and collections, and that continue to be enriched through increased professional development opportunities for teachers, have the potential to grow into life-long connections with these spaces.

Yet more importantly, we hope that this project has helped to demonstrate that young children have an important contribution to make as citizens now, not just as adults of the future. This is more than a matter of ethical pedagogical praxis. It is about developing an understanding of collections as relational and dynamic entities. **Young children can and should be given opportunities to take an active and participatory role within our museums and collections**, and this extended residency, and the subsequent analysis by a multi-disciplinary team of practitioner-researchers, has been one way of enabling children to contribute to and develop the ways in which we use collections right now.

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Appendix 1 The residency week

A skeleton plan of suggested activities was prepared in advance, but much more planning was done in the moment, based on close observation of the children and daily reflections. The children experienced a wide variety of locations and activities.

Day	Location	Activities within the collection	Activities in the education space
Monday	CUBG	<ul style="list-style-type: none"> ● Circular walk featuring bamboo plants, wooden bridge, main walk ● Opportunities to collect fallen leaves & other treasures ● Mirrors & magnifying glasses under trees 	<ul style="list-style-type: none"> ● Making leaf crowns ● Journaling (drawing or sticking in found objects) ● Playing with mini lawnmowers & wheel barrows ● Tasting “tree strawberries” ● Planting bulbs
Tuesday	Fitzwilliam Museum	<ul style="list-style-type: none"> ● Hungry Caterpillar story & puppets in Flower Gallery ● Viewing and discussion of <i>View of Scheveningen Sands</i> by Hendrick van Anthonissen (“The Whale Painting”) ● Hunting for minibeasts using CUBG Nature Spotters Guide ● Drawing in sketchbooks 	<ul style="list-style-type: none"> ● Making arrangements using clay and natural objects (including those found at the garden) ● Construction/small world play using loose parts and insect toys
Wednesday	Fitzwilliam Museum	<ul style="list-style-type: none"> ● Gruffalo story & puppets in ceramics gallery ● Drawing with string and graphite sticks ● Hunting for animals using CUBG Nature Spotters Guide ● Exploring the revolving door ● Laying on the floor of Gallery 3 to experience the ceiling 	<ul style="list-style-type: none"> ● Continued opportunities to explore clay and natural materials ● Extended drawing opportunities incorporating the floor, the table and small world resources
Thursday	CUBG	<ul style="list-style-type: none"> ● Guided exploration of the glasshouse range using a small world toy as a prop ● ‘Tidy’ story on the grass area ● Opportunities to run and play on the main lawn 	<ul style="list-style-type: none"> ● Small world play in ‘mini gardens’ ● Journaling ● Lawn mowers and wheel barrows ● Chalking on blackboard table ● Tasting grapes ● Playing in a mound of fallen leaves
Friday	Fitzwilliam Museum	<ul style="list-style-type: none"> ● We’re Going on a Bear Hunt story in the French Impressionist gallery ● Play with musical instruments to create sound effects ● Drawing 	<ul style="list-style-type: none"> ● Print making using natural objects and plasticine ● Paddling pool with scented waterlilies ● Footprint painting

At the end of each day of the project we would undertake a mini action-research cycle, collaboratively planning the following day’s activities based on the observations and brief analysis.

Appendix 2

Planning Documents

- Participant information sheets – one for adults and one for children (including photographs of the places that would be visited and the educators involved)
- Consent forms for adults to allow their children to take part in the study, including details on how to withdraw from the project at any stage
- Consent forms for adults to allow their children and their work to be photographed, video-recorded, voice-recorded, and for this to be published (with pseudonyms)

ADULT INFORMATION SHEET

Section A: The Research Project

1. What is the title of the project?

The project is called 'My Nursery School is at the Museum and the Garden'.

2. What is the purpose of the study?

We want to learn more about what the dual settings of the museum and garden offer to young learners and to develop a better understanding of how educators from Early Years settings, Museums and Botanic gardens might work together.

3. Who is organising the research?

The research is being carried out by Kate Noble and Nicola Wallis at the Fitzwilliam Museum, Felicity Plent & Bronwen Richards at the Cambridge University Botanic Garden and Lisa Tuohy and Gemma Pollard at ACE Nursery.

4. What will happen to the results of the study?

The results of the study will be analysed and interpreted and included in project reports. These will be shared among the Early Childhood, Museum Education and Botanic Garden communities through blog posts, presentations and articles in print and online, including via the Museum and Garden Facebook and Twitter feeds.

Whom should I contact with any queries?	Whom should I contact if I have a complaint?
Nicola Wallis, Project Co-ordinator Fitzwilliam Museum Education Department 01223 332904 nlw30@cam.ac.uk	Dr Kate Noble, Research Advisor Fitzwilliam Museum Education Department 01223 761678 Kjr21@cam.ac.uk

Section B: Your Participation in the Research Project

1. Why has my child been asked to take part?

Staff at ACE Nursery have selected a group of children to take part in this project. They think that your child is happy and settled in the nursery group and will enjoy taking part in the visits.

2. Can we refuse to take part?

Yes – participation in the research study is entirely voluntary, and will have no impact on opportunities to take part in any other trips or nursery activities. If your child does not want to take part on the day, then he/she will not be forced to go on a trip and will be able to remain at nursery instead.

3. What if we agree to participate and then change our minds?

Your child is free to leave the project at any time, and you won't need to explain why. If your child takes part in a visit and then you decide you do not want him/her to be included in the study, then simply complete the slip at the end of your consent form, and return it to the nursery staff, and we will not include data given by your child or direct quotations from your child in the written report.

What will happen if we agree to take part?

Educators from the Fitzwilliam Museum and the Botanic Garden will come to visit the children at ACE Nursery on Monday 2nd October.

Your child will then have the opportunity to take part in the following outings:

Monday 9th October 10:00-12:00 – visit to Botanic Garden

Tuesday 10th October 10:00-12:00 – visit to Fitzwilliam Museum

Wednesday 11th October 10:00-12:00 – visit to Fitzwilliam Museum

Thursday 12th October 10:00-12:00 – visit to Botanic Garden

Friday 13th October 10:00-12:00 – visit to either Fitzwilliam Museum or Botanic Garden, based on children's choice
The children will be transported from ACE Nursery to the museum or garden by taxi, accompanied by nursery staff at a ratio of 1 adult to 3 children.

At the museum and garden children will have opportunities to participate in a range of activities from storytelling, games, art activities, gardening, close observation, supported by experienced members of the education team in each location.

Children will use a journal to record their experiences, and there will also be a project journal on display at the nursery. Nursery practitioners will build on the experiences back at ACE to continue to develop the children's learning and understanding.

Photographs of the activities will be taken as usual by ACE staff for display purposes. In addition, photographs and video recordings of the children and the work they create will be taken for purposes of the research study.

4. Are there any risks involved? How will we be kept safe?

Children will be supervised by qualified and experienced staff throughout. The risks are no greater than a normal visit out of the nursery. Children will be reminded to use their 'museum feet', and hold handrails/adults' hands as necessary, and will be warned of any significant hazards at the garden such as water and garden machinery. All members of the research team will pay close attention to the wellbeing and happiness of the children, and if any particular object, activity or discussion is uncomfortable for your child, they will be supported to find an alternative activity if necessary.

5. Does signing a consent form have any impact on my legal rights?

No. Agreement to participate in this research does not compromise your legal rights should something go wrong.

6. What will happen to any data collected?

Photographs and video-recordings will be captured by members of the project team and the children. These will then be uploaded to a secure storage drive.

The video recordings will then be transcribed, at which point pseudonyms will be applied to all children.

This data will then be analysed and written up into reports, blog posts, articles and presentations to be shared with others in the education research community. ACE Nursery, the Fitzwilliam Museum and Cambridge University Botanic Garden will be named in the reports. Children will be given pseudonyms as part of the research project so their real names will not be published.

7. Are there any benefits associated with taking part?

We hope that your child will have an interesting and enriching visit, and that all kinds of learning will result from spending an extended period of time in a stimulating environment. It may introduce your family to new ideas about things to do locally, and information gained from the study may help to influence future education provision in the early years.

8. How will our contribution be kept confidential?

Your child will be referred to in the research using a pseudonym-his/her real name will not be included. Other than approximate age (in years), no other personal information will be recorded. Access to the raw data will be limited to the immediate research team.

Dear _____,

We want to find out how children play in the museum and the botanic garden.
You can help us by coming to visit:



Nicola and Kate at the
Fitzwilliam Museum



Flis and Bronwen at the
Botanic Garden



If you want to join in, you can come to the museum or garden with your friends and nursery teachers. You'll be able to look around, play, draw and make things. If you don't want to come, that's fine, maybe we'll see you another time.

We'll take photos and a video to remember what we all did.

The adults will listen to your ideas, think about them, and tell other people all about the visits.

Gemma, Virginie and Diana will be coming on the trips too. Talk to them if you have any worries.

Thank you for reading this letter.

Best wishes,
Nicola, Kate, Flis and Bronwen

My Nursery School is at the Museum and Garden

Consent Form

Child's name : _____

Main investigator and contact details:

Nicola Wallis

Fitzwilliam Museum Education Department, 22 Trumpington Street, Cambridge, CB2 1RF

Nlw30@cam.ac.uk

1. I am the parent or legal guardian of the above named child.
2. I agree to my child taking part in the above research. I have read the Participant Information Sheet which is attached to this form. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.
3. I understand that my child will be photographed and video recorded for the purposes of this research, that the footage will be stored securely and analysed by members of the research team.
4. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.
5. I have been informed that the confidentiality of the information I provide will be safeguarded.
5. I am free to ask any questions at any time before and during the study.
6. I have been provided with a copy of this form and the Participant Information Sheet.

Name (print)..... Relationship to child:.....

Signed.....Date.....

YOU WILL BE GIVEN A COPY OF THIS FORM TO KEEP

If you wish to withdraw from the research, please complete the form below and return to the nursery staff

Title of Project:

I WISH TO WITHDRAW FROM THIS STUDY

Signed: _____ Date: _____

Parent/Guardian Consent Form*

Permission for use of photographs, video/film and sound recordings of children, young people and vulnerable adults taken by the University at or for the Activity/Event

Activity/Event:

Date and Time of the Activity/Event:

Activity/Event Organiser, Contact Details: N. Wallis nlw30@cam.ac.uk

I consent for my child or vulnerable adult in my legal charge (named below) to take part in the Activity/Event at the University of Cambridge ('University').

Also, for my child's or vulnerable adult's participation in and support and material provided for the Activity/Event by the University, I consent to the following:

1. I give permission to the University and those authorised by the University to take images of and/or record my child or vulnerable adult in my legal charge at or for the Activity/Event by photograph and/or video/film and/or sound recording ('Recordings').
2. I grant to the University the right and the right to authorise others to make the Recordings available across all platforms and all media (in whole or in part, transcribed or otherwise) in perpetuity throughout the world for the non-commercial educational and promotional purposes of the University, such uses including but not limited to print and online publication and broadcast, e.g. in websites and social media sites such as YouTube, Facebook and Twitter.

3. The information provided in this Form is to be used as described above and is managed and stored by the University with my consent. Further information about the University's use of my personal information is at:

<https://www.information-compliance.admin.cam.ac.uk/data-protection/general-data> .

* **Parental/Legal Guardian permission and consent is required for:**

a 'child' – a person under the age of 18;

a 'vulnerable adult' - a person aged 18 or over whose ability to protect himself or herself from neglect, abuse or violence is significantly impaired on account of disability, illness or otherwise.

Name of Child / Vulnerable Adult:

Name of Parent / Guardian:

Signature of Parent / Guardian:

Postal Address / Phone / Email:

Date:

Appendix 3

Post-Project Activities

After the final day of the project, all the educators were asked to fill in a version of the questionnaire they had completed before the residency week, reflecting on their views of museums and gardens and what had been the benefits of taking part in the experience. This was expanded on through follow up questionnaires for the museum and garden educators and follow up video-recorded interviews (using the same questions) for the nursery educators which offered an opportunity to give a more extended personal response.

The interviews with the nursery educators were made at the nursery two weeks after the residency, when the museum and garden educators visited for another outreach visit. The museum staff brought the children's artwork which had been left at the museum to dry, and the garden educators brought along a gift of a planter and some bulbs so that other children could also take part in a planting activity and so that there would be a lasting memory of the residency visit in the nursery garden itself.

Celebrating with Parents

One month on from the residency, the families of the children involved were invited back to the Botanic Garden. This event was attended by 7 of the original 9 children, along with their parents and siblings (including a 7 day old baby!). The children were able to take their families around the Botanic Garden spaces and explain to them about the various activities that they had taken part in. There was also an opportunity to view photographs taken during the week and to share the children's individual project journals which contained pictures, drawings and collages recording their experiences. Parents were able to meet the museum and garden educators and share their impressions of the project and what it had meant to their child. They also had the opportunity to contribute their views through a Survey Monkey online questionnaire, but only two families took part in this.

Bringing the families into the garden added another dimension to the project and many interesting and instructive conversations were had. However, as parents and families were not a key focus of our research questions or design and we did not seek their consent to be involved as research subjects, this event is regarded as a supplementary celebration, rather than a key piece of our research data.

Appendix 4

Final Report to Children

Dear children,

Do you remember when you spent a week with us at the Fitzwilliam Museum and Botanic Garden?

Playing with you, talking to you, and looking at all the photographs, videos and artwork from the week has helped us understand more about what it's like for children at the Museum and Garden.

We have had a good think about everything that happened and this is what we found out:

- You found things you liked in the museum and garden showed us that you cared about them.
- At first some of you felt a bit nervous to come to a new place, but you soon settled in and felt at home.
- Lots of you enjoyed having toys, sketchbooks and artwork that you could move between nursery, the garden and the museum.
- We thought that spending a whole week in the Museum and Garden was a nice chance for adults and children to play and work together.
- Having lots of adults and just a few children meant that there was lots of time to listen to you carefully and think about what you were telling us. All of the adults enjoyed this, and it's given them new ideas that they can use with other children too.

Thank you so much for joining in with this project! We have written all about everything that we did together, and now we are going to tell lots of other teachers and people who work in museum in gardens what we have found out. We couldn't have done it without all of you!

We hope to see you again soon,

Nicola, Kate, Flis and Bronwen

