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## Engaging Young Minds: Museum Education for Children Under Five

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### Abstract

#### The museum's play-based learning environment

This research explores the Museum's play-based learning environment as a transformative space for children under five, highlighting a significant shift in the role of museums. Traditionally focused on preserving and displaying artefacts, museums now actively engage visitors. A prime example of this evolution is the Postal Museum's outreach initiative, which includes the "Post and Play" program. This initiative offers interactive activities to spark curiosity and foster a love for learning among young children. Through this approach, children and their families can explore educational content while playing, underscoring the importance of interaction and engagement in early childhood learning. To gather diverse perspectives on these interactions, this qualitative study plans to adopt an interpretivist strategy employing semi-structured interviews. The insights gained will be synthesised through thematic analysis, allowing for the identification of common themes and offering recommendations for enhancing play-based educational opportunities in museums. This aligns with existing literature that underscores the value of interactive learning environments (Mukherji and Albon, 2023). The research used a non-probability sampling method, selecting subjects without random sampling (Bryman, 2016). The approach includes observing four sessions over four weeks with fifteen children under five and their parents. It aims to target a culturally diverse group, comprising 10 to 20 children and 5 to 10 participating parents in each session.

**Keywords:** Educational spaces in museums, communication, children's agency



## Introduction

### Children's Communication Skills

This empirical study explores the quality of interactions between young children and their parents or caregivers during play, focusing on children's agency and enjoyment. According to research by Mohan et al. (2021), effective communication is vital for young children's development, influencing their ability to express needs, build relationships, and enhance cognitive skills. This study examines these interactions within an educational context, particularly at the Postal Museum, to understand how children's agency and enjoyment manifest while engaging with peers and adults. Early social and emotional experiences are crucial for shaping children's future performance and overall development, as Mohan et al. (2021) emphasised. Thus, the investigation highlights the importance of nurturing positive interactions between children and their caregivers, which are fundamental to their growth and relational skills.

### Museums' role in the early development of skills

An inspiration for this project emerged from a recent study on museum education, examining how its learning space aligns with the Key Stage One curriculum. The goal is to investigate how museums facilitate the early development of young children. Research indicates that skills and interests developed during these foundational years set the stage for future learning in formal educational settings (Siraj-Blatchford et al., 2008; Tymms et al., 2009). Critical foundations for children's formal learning and social development may develop during early childhood, and museum settings might significantly contribute to this process. A study by the Museums Association (2021) shows that museums have transitioned from merely conserving artefacts to becoming vital learning environments for young children and their families. They offer unique play experiences, such as object play (Land-Zandstra, 2020), which enhance communication and social skills (Papadopoulos, 2020; Papadopoulos & Hathaway, 2024; Papadopoulos & Shin, 2021).

### Interactive environments

Museums create interactive environments that allow children to engage with peers and supportive adults, promoting social interaction and communication. As outlined in Bruce (2011), a child-centred approach emphasises the importance of play in children's learning and development. Research supports that play is essential for helping children learn and construct knowledge based on their experiences. This view aligns with Dewey's (1964, cited in Miller and Pound, 2011) experiential learning theories, asserting that direct experiences are crucial for educational journeys. Therefore, museum exploration enhances children's knowledge and supports their social and communicative development, establishing a solid foundation for future learning.

Additionally, inquiry-based learning fosters curiosity and exploration, making it particularly effective in interactive environments like museums. This method encourages independence and agency (Weisberg et al., 2016, as cited in Cho, 2024). A refined definition of play, "guided play," balances direct instruction with unstructured play, effectively merging child-led autonomy with necessary adult support, thus addressing developmental goals (Yates et al., 2022; Young et al., 2022).

### An additional learning space for formative development

This paper aims to enhance existing literature on museum play-based learning and assist parents and caregivers in making informed choices about museum learning environments designed to support child development. The primary focus is to explore how museum spaces can serve as alternative learning

environments for children under five, specifically investigating their potential to foster essential skills like communication, agency, social play, and enjoyment.

To ensure the objectivity of this study, clear and concise interview questions should be used while allowing ample time for participants to respond, thereby minimising ambiguity. Implementing credible and consistent methodologies, such as a qualitative design (Denscombe, 2021), will support participants in interpreting the event. Engaging in reflection will help reduce any potential biases. For example, maintaining a reflective diary allows the researcher to document their thoughts and feelings, which is crucial for recognising and addressing biases. Piloting the data collection process also ensures clarity in all questions, preventing confusion or misleading results. Incorporating these ethical practices into the research design can enhance the validity of the findings and contribute valuable insights into optimising museum environments for the developmental needs of young children.

## Literature review

This literature review centres on museums' learning atmospheres. The choice is essential for museums' role in improving communication skills and encouraging exploration among young learners. Furthermore, it will tackle the ongoing discussion regarding communication development in early childhood.

The review will begin by exploring the meaning of communication and its importance in young children's development, followed by key theoretical debates regarding their communication skills. Next, the literature review will examine children's agency and the role that play affords them in developing self-awareness, which is essential for their overall well-being. Finally, the review will focus on the enjoyment children and their parents or caregivers derive from museum sessions and how this enjoyment relates to social development.

## Chapter 1: Children communicating with their peers and parents during play.

### The Significance of Children's Communication Skills

Understanding children's communication skills is essential for recognising how they develop during the early years, particularly through constructive play. Research by Rohimajaya and Hamer (2020) indicates that children learn by observing and mimicking the behaviours of adults around them, both verbally and nonverbally. Furthermore, Sultana and Purdy (2024) emphasise the importance of a language-rich environment, revealing that children's interactions with their parents significantly enhance vocabulary acquisition during formative years. After analysing the theoretical framework of this paper, there are direct arguments about parental involvement in children's communication. The environment can also influence how communication skills in children develop. Rowe (2012) supports this notion by highlighting that the frequency of language exchanges between parents and children plays a crucial role in a child's language development and overall growth. These findings underscore that the interactions and rich language exposure children receive from adults are fundamental to their communication development.

### Language Development in Young Children

Effective communication in interactive environments, such as museums, significantly enhances children's language development. Research conducted by Mohan et al. (2012) demonstrates that children's interactions during play lead to improvements in language comprehension, critical thinking, and emotional expression. Additionally, studies by Cho (2024) and Shuang-ching Lee (2020) highlight the role of museum educators in promoting early language development through engaging strategies.

These findings suggest that when children communicate and engage with others in playful settings, they not only improve their language skills but also develop essential cognitive and emotional abilities. Museums, with their diverse exhibits and interactive opportunities, provide an ideal environment for these interactions. The dynamic atmosphere encourages cooperative play and problem-solving, which are crucial for effective language acquisition, highlighted by Sultana and Purdy (2024). Therefore, leveraging the interactive context of museums can greatly support children's language development, reinforcing the idea that a child's environment plays a vital role in their overall language acquisition journey. Both empirical and non-empirical studies have agreed on the influence of a child's environment on language acquisition, and engaging with educators and participating in object schema play strategies can further enhance these meaningful interactions.

## Chapter 2: How Play Contributes to Children's Agency

### Play Types and Factors

Chapter 2 emphasises the critical role of play in fostering children's agency and independence. According to Lipovsky (2020), allowing children to make choices during play helps them practice essential social skills, including taking turns, negotiating, and resolving conflicts, which are vital for developing healthy relationships. This evidence highlights how play is not merely recreational but serves as a foundational activity for children to enhance their interpersonal skills. By practising these skills in a playful context, children are better equipped to navigate social interactions and build meaningful connections with others. The chapter further argues that spaces like museums can effectively facilitate this learning through constructive play, enriching children's developmental experiences. Reviewing Land-Zandstra's (2020) theoretical framework on constructive play can serve as a platform for enhancing these exchanges. When children engage in play, they are not just having fun but actively developing essential skills such as empathy, problem-solving, and emotional intelligence. Vygotsky (1978) and Wretch *et al.* (1995), as cited in Sairanen *et al.* (2022), suggest that constructive play lays the groundwork for these critical cognitive, social, and emotional skills. By inviting playful exploration, museums can enhance children's communication skills and encourage communal connections and collaborative engagement among peers. This interactive learning process fosters children's curiosity and deepens their understanding of the world. Overall, the insights drawn from this discussion illustrate how museums can become dynamic environments that support children's language development and social skills through playful engagement, thus significantly contributing to their overall growth and learning journey.

### Free Play

This refers to the chance for individuals, especially children, to engage in spontaneous interactions and meaningful communication while exploring unstructured settings. In free play, participants can unleash their imagination to create scenarios, build relationships, and develop social skills while navigating their environment without a set agenda or rules. This organic form of play fosters creativity, problem-solving, and collaboration as individuals express themselves and connect with others in a relaxed, open atmosphere (Land-Zandstra, 2020).

### Cognitive Development

Museum play is not just a fun activity for children under five; it is an integral aspect of their learning and development. It promotes exploration, creativity, and social interaction in a unique educational setting. Mclean (2018) agrees that play provides practical experiences that stimulate curiosity and

foster imaginative thinking. These playful interactions are crucial for developing essential cognitive and language skills, particularly when children rapidly acquire new vocabulary and concepts (EYFS,2021). Within the museums, the evidence shows that it allows young children to engage with objects and activities in an enjoyable yet educational way.

As a result, the educational practices implemented in museums demonstrate their significant value as institutions. They empower children, fostering their independence and agency as learners, thereby laying a solid foundation for their future educational journeys. Through exploration and active participation, young learners are equipped with essential skills that will benefit them.

## Chapter 3: Children and parents' enjoyment of the sessions

### Experiences and enjoyment

Chapter 3 will focus on how children and parents experience the museum's play-based sessions. These sessions engage and educate young children while fostering meaningful and enjoyable experiences for children and their parents. Through play, children deepen their understanding and develop their agency and social skills within a community environment (Lienhardt *et al.*, 2002). Families usually participate in the following ways: unstructured play, social play, and physical play. The focus on interactive and firsthand learning stems from Dewey's (1939/1964, cited in Miller and Pound, 2011) theories, which highlight the significance of direct experiences in a child's educational journey. Dewey asserts that children flourish through active and enjoyable exchanges, a principle he termed experiential learning. In this setting, the sessions foster creativity and imagination; small-world trains and mail posting activities ignite children's creativity and enhance their critical thinking. Moreover, these interactive environments encourage children to connect with their peers, fostering essential social skills like cooperation, communication, and teamwork. The friendly atmosphere enhances their engagement, making learning practical and enjoyable.

### The role of adult engagement

In agreement with the Early Years Framework (2021), children develop essential skills through observation and interaction with peers and adults, influencing their future communication and language capabilities. The educational programs offered by the Museum can align with these guidelines to provide children with a well-rounded education that prepares them for academic achievement. The welcoming environment of the Postal Museum is marked by play-based schemes, activities, and object-centred play, which encourages active involvement from children and their families. Understanding this dynamic is key for the museum to recognise how its programs can enhance early childhood learning and development.

Furthermore, the EYFS (2021) outlines the essential skills and knowledge children should develop during their early years. For instance, making connections, focusing, and self-control. Although significant claims regarding the benefits of museums as learning environments are evident, empirical evidence is lacking to entirely support these conclusions, particularly regarding communication skills within museum contexts. Even though empirical studies have explored museum-based learning for children under five, specifically aiming to enhance communication skills. Isan (2019, cited in Topping and Zeedyk,2013) suggests that imitation can promote language development. On the other hand, Topping, Dekhinet, and Zeedyk (2013) highlight the importance of parent-child interactions, pre-linguistic skills, and the role of play in developing a child's communication abilities. Additionally, Bandura (1977, as cited in Korompot, 2023) argues that children primarily learn language through modelling rather than merely imitating. Hence, young children's foundational development of language skills occurs through interactions with peers and adults (Suardi *et al.*, 2019, as cited in Korompot, 2023). Their research investigates how vary-

ing parental roles and communication patterns influence pre-linguistic competencies during early childhood, identifying factors that enhance optimal speech and language development (Topping, Dekhinet, & Zeedyk, 2013).

## Encourage Exploration

Play-based museums provide children with a creative environment that empowers them to lead their play experiences. These settings offer various objects that encourage exploration and experimentation, allowing children to engage in activities like building with blocks or imaginative role-play. By fostering natural curiosity through age-appropriate resources, children are invited to ask questions and experiment. For instance, large foam building blocks alongside other materials support creativity and collaboration, enhancing communication skills and emotional expression.

Research shows that children in interactive environments broaden their vocabulary and improve language comprehension (Parker et al., 2020). Playing with peers encourages socialisation, as children are more likely to include others in their activities. This collaborative atmosphere is vital for cognitive and emotional development, helping children articulate their ideas and understand their world better.

While the benefits of museum experiences for young children are well documented, there is still a gap in understanding their impact on those under five. Research by Adamo and Lozada (2024) highlights the need to further investigate younger children's developmental stages in museum contexts.

Integrating early childhood education within museum settings remains largely unexplored. Researchers like Di Paolo et al. (2010) emphasise that play enhances children's agency in learning. Despite the insights provided, there remains a gap regarding young children's agency within museums and the need to examine effective communication between adults and children in these environments. This research seeks to further explore the role of play-based sessions for children under five in museums.

## Research Rationale

This empirical study is a significant investigation into the impact of play-based museum sessions with established schemas and object-based play on children under five. It focuses on how informal learning environments contribute to early childhood development.

Museums provide a sensory-rich atmosphere featuring interactive activities that encourage cognitive development through active participation. These experiences improve learning and enhance social interactions for young visitors. This study investigates how play-based interactions contribute to language development, fine motor skills, and social-emotional growth. Understanding these interactions allows us to develop museum experiences that effectively support early learning. Museums are essential for enriching young children's and their families' learning experiences. Mohan et al.'s (2021) research shows that museums serve as vital gateways to knowledge, facilitating learning through engaging objects and interactive activities. The interactive nature of museum exhibits allows children to explore concepts directly, cultivating their curiosity and reinforcing essential academic skills. Moreover, it could be argued that when parents and children engage together during these activities, it positively impacts vocabulary, early literacy, cognitive development, and socio-emotional growth (Whitehead, 2002). Therefore, it is imperative for museums to thoughtfully design and promote experiences that maximise the educational value of their visits, ensuring a lasting positive influence on the developmental journeys of young audiences and their families.

## Problem Statement

Research indicates that children's brains are especially receptive to new experiences during this formative stage, making museum visits prime opportunities to cultivate curiosity, creativity, and essential skills.

Museums provide valuable learning experiences, but young children may find it challenging to engage effectively without adequate support.

## Research Questions

Three ethical, open-ended questions that will underpin the research findings:

1. How do children communicate with their peers and parents during play?
2. In what ways does play contribute to children's agency?
3. How do children and parents experience the museum's play-based sessions?

## Theoretical Framework

This research is based on Vygotsky's Sociocultural Theory, which underscores the significance of social interactions in learning, and Dewey's firsthand and interactive learning Theory, which stresses the value of exploratory learning. Furthermore, the Practical Learning Theory (Kolb, 1984) reinforces that children learn most effectively when actively involved.

## Key Concepts

- *Social Interaction*: Learning is enhanced when children interact with peers, caregivers, and museum educators.
- *Hands-on Exploration*: Interactive exhibits and objects encourage cognitive development through direct engagement.
- *Scaffolding*: Supportive learning experiences assist children in grasping intricate ideas.
- *Free-choice Learning*: Museums provide informal settings where children can explore according to their interests. This framework facilitates the organisation of research on how museums can improve their environments to better support young children's learning.

## Research methods

This research is a comprehensive case study of a museum outreach program in an educational setting. As Mukherji and Albon (2023) explain, a case study consists of a series of play studies. This account will delve deeply into children's communication during play and their agency and enjoyment of the sessions (Thomas, 2017). The thorough nature of this case study ensures an in-depth exploration of the children's experiences, providing a rich and detailed understanding of the research subject (Denscombe, 2021).

The research will take place in a museum-based play environment, engaging with children aged 0-5 years and their accompanying adults over four weeks. The children will be observed in this learning environment to evaluate their communication and interactions with peers and adults, focusing on relevant and achievable research (Bryman, 2016). A non-probability method will be employed as it is faster, more cost-effective, easily implemented, and yields detailed sample descriptions (Bryman, 2016). The research approach involves a non-random selection process, utilising convenience samples and other applicable data relevant to the study. Detailed notes will be taken throughout the play sessions, using a non-probability method that incorporates convenience sampling. The museum sessions were at scheduled times; snowball sampling will be used to gather insights from the small children visiting the educational setting on that day. This method facilitates the exploration of emerging themes as initial participants refer others, creating a chain of referrals that displays diverse experiences and perspectives (Punch and Oancea, 2014).

Five to ten minutes before the end of each session, I will conduct semi-structured interviews using probability sampling to ensure a random participant's involvement. Probability sampling involves randomly selecting participants from the group present that day (Bryman, 2016). Cotrell (2014) noted that semi-structured interviews are particularly effective in time-limited research contexts. This format typically employs open-ended questions to gather necessary materials within the research scope.

The benefits of this approach include a structured focus on various themes while promoting open discussions, which can provide valuable insights into the interviewees' perspectives (Coady 2010, cited in MacNaughton *et al.*, 2010) In my study, randomised sampling for these interviews will ensure that a representative sample of participants is included, which is essential for accurately capturing parents' experiences and perspectives. I will select four parents from each session for a brief interview following the play activities to gather comprehensive qualitative insights.

Additionally, I will conduct observations during the museum play session to closely examine the children's communication, interactions, and behaviours with their peers and supporting adults. Convenience sampling may also be used within this non-probability framework to enhance participant selection (Bryman, 2016).

Upholding ethical standards is crucial throughout this process. I will inform all participants about my research intentions, including the purpose of the study, how the data will be used, and the methods for data storage and destruction. This ethical commitment is essential for maintaining the integrity and trustworthiness of the research (British Educational Research Association, 2023). On the research day, I will employ participatory observation and conduct semi-structured interviews with two to four consenting parents using open-ended questions (Denscombe, 2021). I will begin the interview with an introductory question: "What are your thoughts on today's session?" This approach aims to create a comfortable environment for parents, encouraging them to share their experiences (Alderson, 2004, cited in Mukherji and Albon, 2023). To foster further discussion, I will incorporate follow-up questions.

To mitigate the risk of victimisation among vulnerable groups, such as children and those from socially disadvantaged backgrounds, I plan to engage actively with the children during play. Specific protocols will be established to ensure data confidentiality (Coady, 2010, cited in Mukherji and Albon, 2023).

The research seeks to effectively capture children's interactions and parental engagement during play sessions through participatory observations and exit data collection. Over four weeks, I conducted four 45-minute sessions with fifteen children and their parents, complemented by four ten-minute observations and fifty-five exit cards for parent feedback. By establishing rapport and documenting cultural practices as suggested by Christodoulou *et al.* (2023), I ensured a comprehensive understanding of the participants' experiences. The collected data were then organised into three main themes: children's interactions, autonomy, and parental enjoyment, which directly addressed the research questions. This structured approach not only facilitated a detailed examination of the play sessions but also highlighted the importance of parental involvement in the learning process, thereby enhancing the overall understanding of the dynamics at play in the museum's environment.

The conclusions drawn from this research will be based on a case study suggested by Mukherji and Albon (2023). This study will investigate a case or a series of cases, incorporating individual and group situations and semi-structured interviews from a local museum outreach program in London. I have piloted this method to identify potential errors, streamline the workflow, prevent confusion, and pinpoint questions that participants may find uncomfortable or challenging to understand (Clark, Froster, & Bryman, 2019).

The ethical considerations in research involving children are paramount. Before beginning this study, I obtained approval from the university's ethics committee, ensuring compliance with ethical standards. Communication with the museum's play-based sessions manager, facilitated by my thesis supervisor, was crucial for securing written consent from participants and their parents, clarifying the study's purpose, potential risks, and their rights, including the right to withdraw at any time (Coady, 2010; MacNaughton *et al.*, 2010).

Ethics encompasses the moral principles guiding conduct during data collection. Roberts-Holmes (2018) highlights that ethics should underpin all phases of research involving children. I am committed to three core principles: informed consent, confidentiality, and anonymity. Informed consent empowers participants and necessitates clear communication from the gatekeeper (Roberts-Holmes, 2018).

Confidentiality involves securely managing participant data to protect it from unauthorised access. I ensured data was de-identified and anonymised (Cottrell, 2010; Thomas, 2017). Anonymity is vital for protecting identities and building trust. Throughout the study, I emphasized ethical sensitivity, enabling participants to report any concerns about the research process, including breaches of confidentiality.

In conclusion, adhering to ethical standards—especially for vulnerable populations—is crucial for maintaining the integrity and credibility of research (Clark et al., 2019; Cohen et al., 2018; Rolfe & Mac Naughton, 2010).

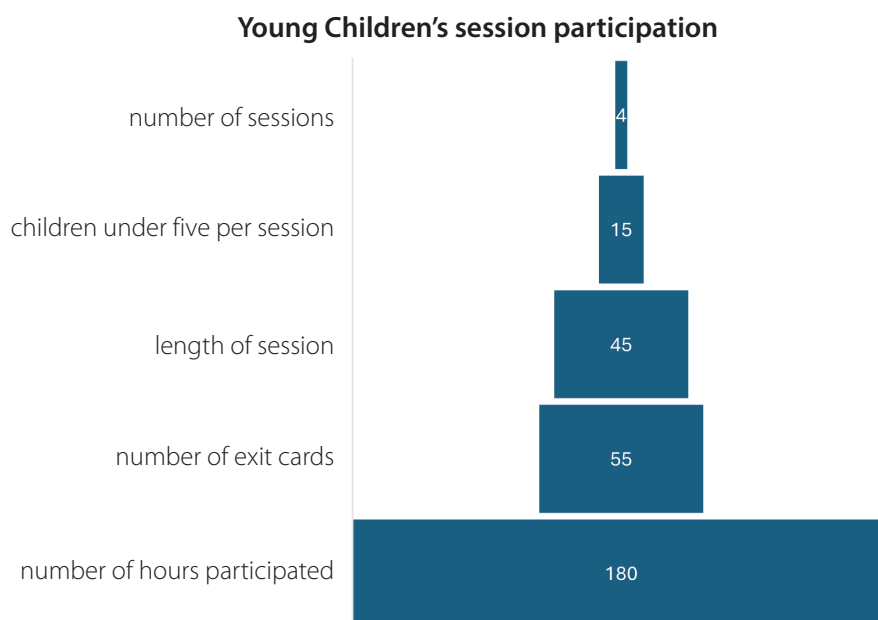
## Results and discussion

Museum learning for children under five provides a unique opportunity for parents and caregivers to support their young children’s development in an enriching environment.

The findings from participatory observations and parents’ exit question cards highlight the significance of museum experiences. Research by Yetes et al. (2022) and Young et al. (2022) emphasises the distinct learning experiences available to children in this context. Through these alternative settings, children engage in direct learning, sensory exploration, and interactive play with objects. Studies by Erdman (2022) and Franklin & Sansom (2018) correlate with these findings, suggesting that such experiences are pivotal for developing critical skills, including communication, agency, and social abilities among young children. Thus, museum programs engage children in meaningful ways and support their overall development, making them invaluable resources for parents seeking to enhance their children’s learning experiences.

This chapter aims to illuminate new narratives on how young children, parents, and carers experience museums. It emphasises the need for more targeted research into alternative early childhood learning environments and offers an encouraging perspective on the potential of such settings.

For example, the following graph illustrates the number of sessions, participants, and hours observed and spent in the museum’s play-based sessions.



**Fig1. Children’s participation data.**

The field trips to the postal museum lasted around 180 minutes and involved sixty children under five years old, accompanied by their parents and caregivers. The visits included four sessions of 45 minutes each, during which the participants took written notes and participated in participatory observation sessions. These museum visits aimed to explore areas of early childhood development, focusing on how young children develop in a museum environment.

The thematic analysis investigates children's interactions during play and their implications for their agency and perceptions of play-based sessions at the museum. The study focuses on three key questions: (1) How do children communicate with peers and supporting adults during play? (2) Does play contribute to children's agency? (3) How do children and supporting adults perceive the museum's play-based sessions? By addressing these questions, the analysis seeks to uncover the dynamics of children's communication and how these interactions influence their sense of agency (Punch and Oancea, 2014). Understanding the nature of communication during play can reveal how children engage with one another and how supporting adults facilitate or enhance this engagement. Furthermore, exploring perceptions of play-based sessions helps assess the effectiveness of these approaches in fostering positive experiences and developmental outcomes for children. This thematic analysis provides valuable insights into the significance of play in children's lives, particularly within a museum setting. It highlights the importance of fostering environments that encourage meaningful interactions and support children's agency.

By focusing on these questions, the museum positions itself as a vital learning environment for children under five. It creates opportunities for them to investigate the history of the Postal Service while also providing parents and caregivers a platform for engaging in object play. This supports language development and nurtures children's sense of agency and enjoyment. Overall, the museum facilitates connections among children, parents, and caregivers, fostering interactions essential for socialisation and developmental growth in a playful context.

## Data Organisation and Thematic Analysis

Thematic analysis is a crucial data analysis method that enhances the understanding of participants' experiences and the meanings they associate with them. Braun and Clarke (2006) emphasised that thematic analysis is essential for grasping the complexities of participants' realities. This method informs the questions researchers may pursue and allows for a deeper exploration of the data collected. Researchers can pinpoint and examine patterns or themes within qualitative data by employing thematic analysis, as noted by Cohen *et al.* (2017) and Thomas (2017). Additionally, Denzin and Lincoln (2011, cited in Mukherji and Albon, 2023) describe qualitative research as an approach that investigates phenomena in their natural settings, focusing on the interpretations individuals ascribe to their experiences. This dual approach of thematic analysis and theoretical coding aids in structuring the data, categorising similar information, and yielding insightful descriptions (Braun and Clark, 2006).

As a result, the application of thematic analysis and theoretical coding not only reveals significant themes about children's communication and agency but also provides valuable insights into the experiences of both children and their parents, highlighting the importance of understanding these dynamics in qualitative research (Neem and Ozuna, 2022).

## Research Activities and Data Collection

### Reflections and Minimising Bias

To maintain the highest standards of rigour in my research, I continuously reflected on my beliefs and assumptions throughout the study. This introspective process was essential for identifying and

minimising any biases stemming from my perspectives or past experiences, which could inadvertently influence the findings and undermine the integrity of my work (Bakana, 2022). Although it is not always possible to eliminate all my biases, by consciously examining my thoughts and feelings, I sought to create a more transparent lens through which to interpret the data, ensuring a more objective and trustworthy outcome (Bryman, 2016; Cohen *et al.*, 2017).

## Significance of Methodology

The museum's interactive sessions effectively supported the development of young children by encouraging participation and play without constraints. The interpretive nature of the research methodology allows the participants to express their human behaviours, which were documented through detailed field notes and observations, as well as exit question cards from parents. All of these provided essential insights into the children's experiences during the sessions.

Through participatory observation, I was the primary data source, capturing the nuances of young children's interactions in a museum setting. This data collection was further enriched by the emergence of three sub-teams that provided additional insights, revealing how the museum environment contributes to language development, enjoyment, and social play among children under five.

This comprehensive approach highlights the importance of interactive learning environments in early childhood development, emphasising the need to research how such spaces facilitate key growth areas.

As observed, parents and children gathered in a circle to commence the session, singing songs around the museum team and preparing with the children for the session.

A quote from the data is as follows...

*A: We are the postie, we are the postie, so get ready to take the mail, we take it by bike, we can take it by boat, or we can take it by train.*

The session lead sang this to the team, "Wheels on the Bus," to indicate the session's start.

I observed children moving around the designated play area, interacting with objects and experiences in the museum, and making their own choices from the available setup. Parents lower themselves to the children's level.

A quote from the data is as.....

*S1:*

*A: "Nice to have the under-fives catered for."*

## RQ1. Children's communication with adults and peers

### Language development

Piscitelli and Weier (2002) emphasise the significance of collaborative play in museums. They argue that this type of play encourages children to engage deeply with exhibits and learn through social interactions. This approach fosters community and shared learning among young visitors, enhancing their overall museum experience. Through collaborative play, children can interact with their peers, model positive communication behaviours with adults and peers, and develop conflict resolution skills. Likewise, Lienhardt *et al.* (2002) supplement that children deepen their social skills and museum space might abet this; children can develop these skills through play. As a result, children can explore and understand complex ideas more meaningfully and enjoyably.

## RQ1. Children's Communication with peers and supporting adults during play.

### Conceptual conversations

To address the first research question, it was evident from the outset that children's communication with adults and peers was thriving.

As follows, a quote from the data.....

S1:

C: *'Come on, mum, let us go, it is starting. (see Appendix B)*

A: *"Yes, we are here now. Let us see what is in store today" .....*

A young child entered the museum, looking excited as they entered the setting. They held their mother's hand and conversed.

The Significance of Children's Communication Skills

The themes derived from the literature review were how children communicate with their adults and peers during the session.

For example, the following extract from the participatory observations shows that ...

S1:

A: *Shall we play with the balls?*

C: *Yes, the colourful ones. (see Appendix B).*

A child under four years with a supporting adult took turns rolling the different-coloured balls down the ramp and over, and every time, a smile was on the child's face as they repeated the action several times more, related to one of the themes from the literature review, where verbal communication was involved. How children use verbal Communication, such as words, phrases, and sentences, to interact with their peers and other adults around them, confirms with Rohimajaya & Hamer 2020 how children observe and mimic the behaviour of adults and peers in their surroundings verbally and non-verbally. Likewise, Rowe's (2012) theory highlights that the frequency of language interactions between parents and children during these crucial years significantly influences a child's language abilities and overall speech development.

## RQ2. Children's agency

### Cognitive development through free play

Another theme that emerged from the data was children's cognitive development. Cognitive development is essential because it supports a child's thinking and problem-solving abilities. Museum play-based settings provide rich, interactive experiences that stimulate cognitive growth. Young children engage in problem-solving and critical thinking as they explore the objects and participate in first-hand activities. According to Erdman (2022), high-quality interactions, particularly involving parents, significantly influence children's development. Cognitive development occurs within social interaction, which is vital to the meaning-making process (Cho, 2024).

The data analysis has highlighted several communication and free play activities linked to children's cognitive development, particularly in their preliminary stages. During the exploration session, fifteen children under five participated in play-based activities. Throughout these sessions, they exhibited problem-solving behaviours in various spontaneous activities, demonstrating their eagerness to incorporate problem-solving ideas into their play. This emphasises the significance of cognitive development during

these interactions. In contrast, children under two were engaged in activities selected by their accompanying adult, limiting their opportunities for independent exploration.

A quote from the data is as follows...

*S2: Shall we play with the coloured scarf? One adult said to a child under one year old and placed the child on the mat. The child explored briefly, then began to crawl to another activity.*

*A: "I see you want to explore the sensory mat, ok, let us see how they work"*

Children's agency significantly influences their learning experiences in play environments. The observations indicate that children over four independently choose which schema area to explore, demonstrating a preference for self-directed learning. Yates et al. (2022) highlight the importance of listening to children's voices and observing their interactions, underscoring how this engagement fosters a sense of control over their environment. When children are allowed to select their play items, they display increased investment in their learning. This autonomy not only enhances their involvement but also reinforces their decision-making skills. Conversely, younger children, who adults guide, may miss opportunities to express their preferences and engage fully, suggesting that a balanced approach is necessary to support their development. Therefore, museums and educational spaces must critically evaluate their designs to ensure they prioritise children's true interests and agency over adult expectations, enriching the overall educational framework.

A quote for field data is as follows.....

*S4: A child plays a game in which they have a phone conversation with their presenting adult. They pretend they are communicating with each other. Look, put it in the same colour as mine... They both chose the blue flashing light on the sensor phone. They played together, pressing the buttons on the keypad, changing the colours each time on the phone's screen.*

This child, about three years of age, chose freely to play the phone call game with a supporting adult.

The second research question is: How does play contribute to children's agency? The literature states that children could choose from the provided schemas and play sets.

### *As the data shows*

Consequently, adults in the setting manage the selection, interpretation, and curation of objects, restricting children's ability to influence what is emphasised and how they would or what objects they would like to play with (Brookshaw, 2016). Furthermore, items created for children often reflect adult views on their interests and the schema they may have in mind in specific "children's areas" (Franklin and Sansom, 2018).

## **RQ3. Parents' or carers' enjoyment of these sessions.**

### **Types and contexts of play**

Play provides a safe space for children to express and manage their emotions. To investigate the third question of how children and parents/caregivers experience the museum's play-based sessions, play supports emotional intelligence, helping children understand and navigate their feelings and those of others. It stimulates curiosity and exploration, encourages a lifelong love of learning, and gives children the confidence to explore new environments and concepts. For example, constructive play involves building with blocks or materials that create a structure. Play also plays a significant role in children's development by fostering independence and agency (Weisberg et al., 2016, as cited in Cho, 2024).

This was evident when children entered the museum space, as derived from both field notes and parent exit cards on the enjoyment of the session. Parents commented on how they felt their children enjoyed the session.

An extracted form of the data is as follows..... (see Appendix B)

*S3... (see Appendix B)*

*C: I want to play with you and build a tower.*

*A: ok, I want to build with you*

*C: I want to make it big, like this*

*A: Yes, bigger than you up.....*

They played together with two other children and supporting adults, constructing their towers for half of the session. Cho (2024) argues that interactions can improve negotiation skills and enhance children's emotional intelligence. Imaginative and unstructured play is important in developing critical thinking skills. It enhances cognitive flexibility and creative thinking, empowering children to devise solutions and explore innovative ideas. Interacting with peers fosters social development. Children learn to share, cooperate, and communicate effectively in group activities or collaborative play.

*S4...*

*C: "I love the trains, look at it go round the track."*

*A: "Mine too, it goes up and over the bridge" .....*

The child and adult communicated with each other as they explored the small world train and track.

Erdman (2022) emphasises that encouraging interactions, especially with parents, significantly influences children's growth. While exploring cause and effect, children engage with their parents, smiling as they take turns adding different pieces to the train track, changing its shape. Full action. This study examines how children communicate with educators and each other through play. It highlights the importance of play-based learning in early childhood education and how it contributes to developing intellect, cognition, and motivation. These implications underscore the significance of fostering rich, varied communication experiences in play. By understanding and leveraging these themes, caregivers, educators, and parents can help children become well-rounded individuals.

## **Perceived Knowledge Gap**

The study highlights the significant positive effects of communication during play in a museum environment, particularly among children, their parents, and peers.

It was observed that interactions in this setting allow children to practice essential face-to-face communication skills, including attentive listening, reading body language, and engaging in conversations. These interactions foster the development of social skills, as communication enhances vocabulary, encourages group participation, and teaches concepts such as turn-taking and negotiation.

By developing these skills, children not only improve their social interactions but also learn to manage their emotions, express their ideas effectively, and engage actively with the thoughts of others. This indicates that museums can be valuable spaces for children's social and emotional development through structured play and communication.

However, the study's limitations, such as its quick and small-scale nature, suggest further research to explore museum learning benefits for children under five. Collecting in-depth data from parents regarding their perceptions of museum sessions could provide a more comprehensive understanding of how these environments support child development and parental engagement.

## Gaps

There is a significant gap in research regarding communication skills and parental interaction in museum settings, particularly focusing on young children. While existing studies emphasise the importance of parental communication during early childhood development, little attention has been given to how these interactions occur in the context of museums, and the semi-structured interviews could not be conducted as the gatekeeper withdrew consent at the last minute. This limitation highlights the need for further exploration in this area. Understanding how parents and children communicate in museum environments can provide valuable insights into developmental dynamics and the effectiveness of educational programs. By addressing this gap, researchers can advance knowledge about engaging families in cultural settings and improve children's and parents' overall experience.

Therefore, it is crucial to examine non-empirical studies exploring communication and interaction in museum play-based settings. These studies can illuminate effective strategies to enhance families' museum play-based experiences. Addressing this gap will contribute to a better understanding of early childhood development in informal learning environments.

This study was brief, and the lack of representation of ethnic minorities does not accurately reflect the experiences of young children in museum play. This highlights the need for a better understanding of parental roles. While there is research on parental involvement, further investigation is necessary to explore how parental roles and communication styles impact children's museum experiences.

Identifying these gaps can guide future research, helping fill the knowledge gaps and enhance understanding museums' role in early childhood education.

## Positionality

Having been a practitioner in a nursery setting for over 12 years, I have always believed that young children need a nursery environment to enhance their early developmental skills. While a museum may not be the same as a school or nursery, my perspective changed after conducting field visits and participating in participatory observations with the children, session leaders, and parents within the museum setting. I understood that children's development significantly improves when they receive proper resources and the appropriate environments from caregivers. A supportive atmosphere and practical assistance can profoundly affect their growth and educational journey (Bourke, 2014).

## Conclusion

Early childhood education is pivotal for children's cognitive and social development, and museum settings offer unique advantages. Research indicates that early educational experiences can significantly influence an individual's lifelong learning and overall development. Museums provide stimulating environments that actively foster curiosity and creativity, making them an ideal complement to traditional educational settings. When children engage in learning experiences within museums, they encounter interactive exhibits, objects, play and activities that encourage firsthand exploration and involvement. This learning mode enhances their understanding and retention of information, allowing them to connect concepts with real-world contexts. In these dynamic environments, children can develop essential skills, such as effective communication and a sense of agency, as they actively explore and interact with their surroundings alongside parents and caregivers.

The emphasis on further research in museum-based early childhood education is crucial. By deepening our understanding of how these enriching environments impact child development, we can better equip parents and educators with the knowledge to select suitable educational experiences for their children. Additionally, these insights will inform the development of tailored educational strategies that cater to young learners engaged in museum contexts. Moreover, the role of caregivers in this interac-

tive learning process cannot be overstated. As they accompany children through exhibits and engage in meaningful conversations about what they see, caregivers help reinforce the lessons learned and support their child's intellectual and emotional growth.

In conclusion, exploring the benefits of early childhood education in museums enhances our understanding of child development. It is a guiding framework for fostering enriching learning experiences that lay a solid foundation for children's future growth and curiosity.

## Future Recommendations for Young Children's Museum Learning

1. Develop more interactive and firsthand exhibits that encourage exploration and engagement. These should stimulate curiosity and allow children to experiment with different concepts through play.
2. Offer workshops for parents on how to engage with their children during museum visits. These sessions can provide effective communication and interaction strategies, enhancing the overall learning experience.
3. Ensure that exhibits and programs reflect the community's diverse backgrounds. This can help all families feel represented and provide rich discussion points for children and parents.
4. Organise guided play sessions where trained facilitators can lead activities. This can help children make connections between their museum experiences and their existing knowledge.
5. Encourage ongoing research that observes interactions between parents and children in museum settings. This data can reveal insights into effective communication strategies and their impact on learning.
6. Implement regular feedback opportunities for parents and caregivers through surveys or focus groups. This can help museums tailor their programming to meet families' needs better.
7. Partner with early childhood educators to develop curriculum-linked experiences. This alignment can help bridge the gap between museum learning and traditional educational settings.
8. Create resource guides for parents that offer suggestions on extending learning from museum visits into the home environment, fostering ongoing engagement with the material.
9. Host community events that unite families for collaborative learning experiences, reinforcing the social aspect of learning in a museum context.
10. Regularly evaluate the impact of museum programs on child development and learning outcomes. Use findings to adapt and improve offerings continually.

By implementing these recommendations, museums can create enriching learning environments that support young children's and their families' developmental needs.

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## Annexes

### Appendix A

This section contains the data on the parent exit question cards.

Which we use as support for part of the research investigation

#### Any other comments? What could we do more of?

- Longer sessions as my Any other comments? What could we do more of?
- Longer sessions as my son has a good attention span so can’t play with everything in the time.  
Do more team play, group activities.
- You are doing so well. Thank you.  
The experience was wonderful.
- More time.  
The kids are engaged and interested in everything. Great job, keep it up :)
- Personally for my child it didn’t keep her attention. She is nearly 4 and felt it was more exciting for younger children. Small world play would be interesting.
- Loved all the staff enthusiasm!  
Singing.  
Recommendation from my wife.  
System of different activities bit unclear and kept being told different times/places. Ticket and price system also complicated. So many tickets.  
It’s such a brilliant event to attend. We loved it. Staff are so friendly and accessible.  
Bit longer would be nice  
We really enjoyed it  
Thank you for the session!  
Maybe a long session  
To make the session longer
- Set up a barrier to the stairs to kids can’t run away from the play area so easily  
Include train ride  
Maybe a bit longer play time  
The session could be longer

## Any other comments? What could we do more of?

- Loved modu. That's all we did. Nice calm space. Sorry in the wrong box
  - I would say post and play maybe best for younger children- under 3s
  - Some books in the space would be nice!  
Lovely session, really well managed, pleased to see Makaton in use!  
Lovely session, lots to play with  
Put barriers up- very hard for moms with inquisitive children
  - Maybe bit more letter-based stuff, but maybe thats sorted!  
1 or 2 familiar songs
  - I love it! will definitely come back with my 4 year old. I feel lucky to have Thursdays off!  
Very fun thank you :)  
More little safety helmets
  - Would be great to have it on different days  
N/A Loved it!
  - Awesome event and great support  
no!  
range of new activities for those who come often?  
change up the activities, ask people to take shoes off
  - Loved it!  
More guidance from staff as to how to use toys (I came alone with my children)  
Loved it. Only wish there were more sessions a week  
Nice assortment of toys for all ages  
Longer session and please open on more days  
Great space- such fun toys. Maybe be a barrier to stop them running into train area  
Longer session time it's great!  
None everything is amazing  
Nothing great!  
Lots of variety which was great- a really nice space with lovely facilitators- thank you!
  - longer sessions  
lovely day out, educational and fun for kids  
very nice space  
Think it could be 1 hour session  
Sessions could be longer  
Something more inclusive for toddlers, a bit over stimulating as son has a good attention span so can't play with everything in the time.
- Do more team play, group activities.
- You are doing so well. Thank you.
- The experience was wonderful.
- More time.
- The kids are engaged and interested in everything. Great job, keep it up :)
- Any other comments? What could we do more of?
  - Longer sessions as my son has a good attention span so can't play with everything in the time.  
Do more team play, group activities.
  - You are doing so well. Thank you.  
The experience was wonderful.
  - More time. The kids are engaged and interested in everything. Great job, keep it up :)

## Any other comments? What could we do more of?

- Personally for my child it didn't keep her attention. She is nearly 4 and felt it was more exciting for younger children. Small world play would be interesting.
- Loved all the staff enthusiasm!  
Singing.  
Recommendation from my wife.  
System of different activities bit unclear and kept being told different times/places. Ticket and price system also complicated. So many tickets.  
It's such a brilliant event to attend. We loved it. Staff are so friendly and accessible.  
Bit longer would be nice  
We really enjoyed it  
Thank you for the session!  
Maybe a long session  
To make the session longer
- Set up a barrier to the stairs to kids can't run away from the play area so easily  
Include train ride  
Maybe a bit longer play time  
The session could be longer
- Loved modu. That's all we did. Nice calm space. Sorry in the wrong box
- I would say post and play maybe best for younger children- under 3s
- Some books in the space would be nice!  
Lovely session, really well managed, pleased to see Makaton in use!  
Lovely session, lots to play with  
Put barriers up- very hard for moms with inquisitive children
- Maybe bit more letter-based stuff, but maybe thats sorted!  
1 or 2 familiar songs
- I love it! will definitely come back with my 4 year old. I feel lucky to have Thursdays off!  
Very fun thank you :)  
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- Would be great to have it on different days  
N/A Loved it!
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no!  
range of new activities for those who come often?  
change up the activities, ask people to take shoes off  
Loved it!  
More guidance from staff as to how to use toys (I came alone with my children)  
Loved it. Only wish there were more sessions a week  
Nice assortment of toys for all ages  
Longer session and please open on more days  
Great space- such fun toys. Maybe be a barrier to stop them running into train area  
Longer session time it's great!

Any other comments? What could we do more of?

- None everything is amazing  
Nothing great!  
Lots of variety which was great- a really nice space with lovely facilitators- thank you!
- longer sessions  
lovely day out, educational and fun for kids  
very nice space  
Think it could be 1 hour session  
Sessions could be longer  
Something more inclusive for toddlers, a bit over stimulating

## Appendix B

This section contains the thematic codes.

In the research findings section, code was used, see below.

- S 1..... session one
- S2..... session two
- S3.....session three
- S4.....session four
- A..... adult
- C..... children or children

## Appendix C

This section includes a copy of the unused interview questions that were ethically approved before the commencement of research.

### SEMI-STRUCTURED INTERVIEW

**To investigate the influence of Museum experience on young children's communication and the impact of play to support their development.**

Protocol

Museum institutions are shifting away from the notion of the traditional collection, preservation, study, and display of artefacts and objects; they are now considered an additional learning space for children under five to support their early developmental stages. As a social researcher, I am interested in exploring how this learning space supports young children's communicational development and how this space and play contribute to their agency. I will use this semi-structured interview to investigate how play in a museum's educational space and object play support children's communicational development and how object play and the resources in the museum's educational space benefit play, such as imaginative play, cooperative play, social play, and physical play with peers and parents alike. This research is significant since it will support parental involvement in children's communication, well-being, and play-based skills development in a museum play-based setting.

Research Topic:

**The influence of Museum experience on young children's communication and the impact of play supports their early development.**

Research aim:

The research aims to investigate the quality of interaction between children, their peers, and their parents during play as they discover the museum's educational space and how free play benefits the children's agency.

Ethics:

There are no wrong or right answers to these questions, and you have the right not to answer any question you deem intrusive or offensive.

Also, please feel free to stop me if you have any questions about this interview or if it becomes too much for you.

## Section 1

### General questions

1. Do you mind stating your age?
2. Can I ask you your gender at birth or what you might like to identify as?
3. Do you mind stating your religion?
4. How many children accompanied you to the session?
5. What are the ages of your child/children?
6. What is your cultural background?
7. Are you married or unmarried?
8. Can you tell me what the dominant language spoken at home is?

## Section 2

### Research question 1

- 1.1. What can you tell about your child/communication during the play session?
- 1.2. How important is a child's communicational development?
- 1.3. What are your thoughts on children/ren communicating with others and themselves during play sessions?

## Section 3

### Research question 2

- 2.1. Can you tell me why you chose this play session for your child/children?  
What was your experience with the sessions?

- 2.2** How often do you and your child visit the space, and how is the play supporting your child/children?
- 2.3** Please tell me how play contributes to your child/children's development.
- 2.4** How does your child's voice get considered in their play?

## Section 4

### Research 3

- 3.1.** What can you tell me about your experience of the museum's play-base sessions?
- 3.2.** Can you tell me how often you visit the space with your child?
- 3.3.** Can you explain how your child/ren is enjoying these sessions?

Can you give me an example of this?

Thank you for taking part in this interview. Is there any question you would like to add that we have not discussed?

If, after this interview, you would like any further information and would like to get in touch, I can be reached at U2445667@uel.ac.uk.

Thank you for your time and participation in this study.

## Appendix D

This section contains ideas for the literature review.

- *Reliability*: Collection and analysis fit the actual data that was obtained  
*How to do it?* Pilot your data collection tools.
- *Validity*: the research is a truthful account of the area of study.  
*How to do it?* Use a variety of methods (*triangulation*) or researchers.  
(Clark et al., 2021; Cohen et al., 2018)

A thematic data analysis was conducted to identify themes relevant to the research. This method helps to summarise and describe the findings, find common patterns or themes, and understand the topic in depth (Clark et al., 2021; Mukherji & Ablon, 2018).

### Them1 Children's communication

Children enjoyment	How many times has this been mentioned in the exit cards and field notes	How many participants mentioned it
<b>Theme1 Communications</b> Communication and collaboration during play with peers	Enjoyment	
<b>Theme2 Agency</b> The connection between physical play and bodily autonomy.		

Children enjoyment	How many times has this been mentioned in the exit cards and field notes	How many participants mentioned it
<p><b>Theme 3: The role of parents in facilitating and participating in play.</b></p> <p><b>Sub-theme</b> How children interact with their peers and other families during play sessions.</p> <p><b>Sub-theme</b></p>		

	Exit data	Field data (observation)
<p><b>Theme1</b> <b>Children communication</b></p>	<ul style="list-style-type: none"> <li>• Copy sign language during the starter song and the end time song (under 1)</li> <li>• Gaining in confidence (1)</li> <li>• At the stage of developing words (1)</li> </ul>	<ul style="list-style-type: none"> <li>• Parents use words and gesture actions to communicate with their children during play.</li> <li>• Staff lead the session using words, sign language and gestures to support children's communications.</li> <li>• The parent describes the shape to the child and explains how they can place them together in the post-it box. I am Polish, and we speak Polish at home, although they watch television in English.</li> </ul>
<p><b>Theme2</b> <b>Child agency and how play contributes</b></p>	<ul style="list-style-type: none"> <li>• Try to join in with others during play (under 1)</li> <li>• Choose to play with the car slide and the building blocks.</li> </ul>	<ul style="list-style-type: none"> <li>• Some older children were given a choice to form the setup areas with objects such as a 2D shape sorter, a car, and slides.</li> <li>• The child chose six black cabs and spent half the session with her adult and two other children rolling the cabs up and down the ramp.</li> <li>• This programme gives my child space to build on their love of trains. There is a set like this at home for my older child, who does not let the smaller one use it.</li> <li>• For what was set up for the session, my child could choose to play with the phone or use the blocks to build.</li> </ul>
<p><b>Theme3</b> <b>Parents and children's experiences</b></p>	<p>We love the different equipment. Love the light up telephone</p>	<ul style="list-style-type: none"> <li>• Children and their adult were free to move from one activity to the next during the 45-minute sessions.</li> <li>• My child happily played with other children for most of the session. I enjoyed seeing my child happy.</li> <li>• I love the setup of the train in the tray where my child explored for a while with one other parent and child.</li> <li>• I love the bit where they sat down to sing at the end, my child love nursery rhymes.</li> <li>• My child played with two other children at the cars and slides.</li> </ul>