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Investigating and Learning from Toddler Play in a Children's Museum

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Abstract

The play needs of under three's is an under-researched area. In this study 100 parents and carers were surveyed regarding their visit to a children's museum with a child under three. Using a play taxonomy and observation schedule devised for the study, 50 toddlers were also observed playing with the museum exhibits. The findings showed that whilst there were many reasons for the visit, including play, it was not with the purpose of learning. However on reflection, it was one of the perceived benefits. There were significant differences in types of play engaged in; younger toddlers engaged in more ego play and older toddlers engaged in more pretend and role-play. Also, children enjoyed playing and learning with all exhibits despite being arranged for particular age groups. These findings and the tools used in the study will be of interest and use to both early years educators and museum educators.

Key Words: Toddlers; Ego play; Pretend Play; Role play, Children's Museum

Introduction

Play is central to the lives of children and is so important that it should be supported at every opportunity through the provision of playful environments by playful adults (Welsh Assembly Government, 2002; Play England, 2009). Museums, especially children's museums, are places where these opportunities can be realised, however whilst the literature states that museums design for children's play and offer playful learning experiences these are usually aimed at older children rather than their youngest visitors (Luke & Windleharth, 2012). A recently published research agenda for children's museums identified play in children's museums as an area appropriate for further research (Luke, Garvin, & Oberg, 2014). It would also appear from reviewing the literature that the play needs of very young visitors to museums, those aged from 0-3 years, is an under-researched area (Piscitelli & Anderson, 2001). In fact research on play generally focuses on the needs of four year old children and older with minimal research on the needs of the under threes (Pramling-Samuelsson & Fler, 2009). In relation to play in museums there are many reasons why this may be: lack of information as to why parents and carers visit museums with such young children, what the play needs of these children might be or what very young children and their adults do when they visit museums. This article aims to contribute to the recent research agenda and fill a gap in this under-researched area by reporting the results of a survey undertaken with parents and carers visiting a children's museum with children under three years of age. In addition, an observational tool was devised and used to identify types of play

young children engage in when visiting a museum and how this was supported by their adults. The following research questions guided the study:

- Why do adults visit a children's museum with children aged 0-3 years old?
- How do children aged 0-3 years old play in a children's museum?
- How do adults support the play of children aged 0-3 years of age when visiting a children's museum?

Play and Learning in Young Children

Play is valued and considered necessary for children's development and learning and is the central component of developmentally appropriate educational practices (Fleer, 2013; White, 2013). For young children, development and learning may be used interchangeably and encompasses changes in understanding, skills and/or knowledge. Whilst playing, children make sense of their world and their place in it, they learn to problem solve, socialise, communicate and be creative. Play begins at a very early age and from approximately one month of age babies engage in repetitive sensory and motor behaviours which may be viewed as play. As children develop their play moves from being focused on self to the external world, this becomes more varied and interesting to the child. During the second year symbolic play with make believe actions emerges heralding the beginning of pretend and role play. By three years of age children are engaging in dramatic play re-enacting adult roles and by four years of age children are engaging in imaginative and creative play with greater interest on the end product. By five years of age children engage in detailed social role play (Hughes, F. 2010; Howard & McInnes, 2013).

Children need a place to play and, whilst there are many environments designed for children's play and learning, one in particular is the children's museum (Association of Children's Museums, n.d.). This represents a more naturalistic setting to research children's play rather than the constructed laboratory settings of much play research yet is different to the naturalistic educational settings of more recent play research (Pramling-Samuelsson & Fleer, 2009). The first children's museum dates back to 1899 when the Brooklyn Children's Museum opened. It was innovative in its hands-on, 'please touch' philosophy. Nowadays,

children's museums are viewed as 'Informal Learning Environments' which are client centred, serving children, their carers and their needs (Paris & Hapgood, 2002).

Children's museums have now proliferated and, utilising the hands-on active learning philosophies of educators and psychologists such as: Dewey, Montessori and Piaget, an examination of their mission statements and goals have shown that these environments are designed for play, discovery and learning with children having interactive, imaginative and fun experiences (Mayfield, 2005). Learning, in these environments, is designed to occur through physical exploration with the exhibits with educational objectives identified and questions provided to facilitate this learning (Henderson & Atencio, 2007). In more recent years children's museums have focused on defining the early learning experiences available for children, according to areas of learning such as mathematics or science, as well as exploring how adults, especially parents, may support these experiences (Shine & Acosta, 2000; Wolf & Wood, 2012).

However, although children's museums are designed for play, there is much discussion amongst writers, theorists and researchers as to what actually constitutes play and how we recognise it (Moyles, 1989). Often exploratory activities are offered to children as play but, as research shows, exploration and play are different constructs (Pellegrini & Gustafson, 2005). Criteria definitions state that play has certain characteristics which make it recognisable as play and these include: active engagement, intrinsic motivation, attention to process rather than ends, non-literal behaviour and freedom from external rules (Krakowski, 2012). However, these characteristics are problematic when applied to toddler play as the fourth characteristic, non-literal behaviour, cannot be evidenced until well into the second year of life (Hughes, F. 2010). This makes providing play experiences and observing play in toddlers more difficult than for older children.

Another way of defining and being able to recognise play is by referring to play types. There are many category definitions of play such as Piaget's age categorisation of sensorimotor or pretend play for children aged zero to two years, symbolic play for children aged two to seven years and games with rules for children aged seven to eleven years (Piaget, 1951). However, this type of hierarchical, category definition has been widely critiqued for not encompassing all types of play and not recognising that children of different ages have the capacity to engage in similar types of play (Howard & McInnes, 2013). Smith (2010) and Hughes B. (2006) identify typologies of play including: object play, language

play, fantasy play, dramatic play and exploratory play. However, many of these categories and typologies of play overlap, again, making provision and observation of play for learning difficult. This is especially challenging in the context of children's museums as they strive to provide optimal play and learning experiences for young children – how do you provide this when the experience is difficult to define?

A Study on Toddler's Play in Children's Museum

This study is an attempt to provide some clarity to the above question in relation to toddlers, those children aged zero to three years, whose play experiences in children's museums seem to be missing from the literature. It was conducted by the second author as part of her MSc in Play and Therapeutic Play at the University of South Wales, formerly the University of Glamorgan. This was a case study which took place in a children's museum in Western Europe. It employed a mixed methods research design and was in two parts: the first part was a questionnaire survey of 100 parents and carers visiting the children's museum with their toddler. Selection of participants was by random selection with the only criterion being that participants were visiting with child aged 0-3 years of age. Questionnaires were paper-based and completed independently by participants during their visit although the researcher was available to provide assistance if required. The questionnaire was devised by both authors and questions were a combination of open and closed and Likert Scale questions looking at background information regarding the visit and beliefs about museum visits and play. The survey aimed to answer the first research question and discover why adults were visiting a children's museum with their toddler and what they thought about their visit.

The second part of the study consisted of detailed observations of 50 toddlers playing in the museum. Participants were selected from the sample of the survey participants based on their consent to take part in this part of the study. Thirty minute written narrative non-participant observations were completed and the information from this was used to complete an observation schedule detailed below. A sample of narrative observations and completed observation schedules were reviewed independently to ensure consistency of coding across the two data sets. This part of the study aimed to answer the second and third research questions looking at the types of play toddlers engage in when visiting the museum, how adults support their play and how museums might best support toddler play.

For this second part of the study an observation schedule was designed by the second author. Firstly, the author analysed all play taxonomies found in the play literature. She then devised a comprehensive taxonomy of all types of children's play. This taxonomy synthesised terms found across the different taxonomies such as pretend play and problem solving play. Also, based on literature focused on toddlers' development, she devised terms applicable to toddler play not yet found in the literature such as ego play. She named this taxonomy 'Toddlers Play in Museums Taxonomy' (To.P.Mu.T) and this can be found in Appendix 1. From the taxonomy a time sampling observation schedule was devised as a suitable play observation schedule could not be found in the literature. Observation of children's play is a fundamental component of good early years practice and all early years' practitioners are trained to make detailed observations of children's play in order to evidence development and therefore a suitable observation schedule was required for all those practitioners who might want to observe young children's play in this environment (Jablon, Dombro, & Dichtelmiller, 2006). As well as utilising the play taxonomy, this schedule also incorporated Mildred Parten's social play taxonomy (Parten, 1932) so that social interaction during play could be observed. This is an old categorisation of social play but the only one available for this aspect of play. The complete observation schedule named 'Toddlers Play in Museums Observation Schedule' (To.P.Mu.O.S) can be found in Appendix 2.

Ethical approval for the study was obtained from the University Psychology Department's ethics committee and full written consent to obtain the data was given by the Director of the children's museum and the President of the Board of Directors. Written consent was obtained from all parents and carers to complete the questionnaire and observe their toddlers and they were advised that they could withdraw their participation at any time. Children were observed during their free play and with their parents present. There was no interaction between the researcher and child unless the child approached the researcher.

The setting for the research was a Children's Museum in Western Europe. At the time of the research the Children's Museum was located in a two floor neoclassical building in the capital of the country. On the ground floor the exhibits were designed to meet the needs of children in the early years. On the first floor the exhibits were designed to meet the needs of the older children. On the ground floor there were three exhibits named: "Play with water" (for children to explore the properties of water), "Building" (for children to engage in construction activities) and "Market Place" (for children to engage in buying and selling activities). On the first floor there were four different exhibits named "Hello Pythagoras!" (a

mathematic and scientific themed exhibit), “My Body” (designed for children to explore the human body), “Ancients Games” (an historically themed exhibit) and “Kitchen” (designed for children to explore the properties of food and cooking).

Questionnaire Survey Results

100 parents and carers completed the questionnaire and answers were recorded using an excel spreadsheet. There were 27 men and 73 women and the sample consisted of fathers, mothers, grandparents, other relatives and nannies. Half of the sample was visiting a children’s museum for the first time. Their reasons for visiting the museum were because they thought it was a creative place for their toddler to visit, that they could play and engage in hand on activities and they could do something new and different. Interestingly, only 4% of the adults stated that they were visiting because their children could learn. This finding contrasts with a recent survey of museum professionals who placed learning as a primary reason for adults visiting museums with their children (Luke & Windleharth, 2012). Whilst this reason might be applicable to older children it is not necessarily applicable to very young children. The adults were asked what their toddler did whilst visiting the museum and developmentally appropriate responses were given. Toddlers used all their senses to explore exhibits; they touched, shook, examined, observed and mouthed objects. They physically interacted with the environment by sitting, walking, running and climbing. They also laughed, talked, shouted and engaged in role play. These findings accord with the findings from the above survey on toddler behaviour in the children’s museum.

The adults were then asked how they engaged with their toddler during the visit. Responses included: touching exhibits with their toddler, exploring the environment and exhibits with all their senses, walking and running around, laughing, talking about the exhibits and engaging in role play. This latter response is a surprising finding and is in contrast to findings from the literature review mentioned above which found that most parents did not play with their children in museums either because of a lack of confidence or knowledge of how to play. It may be that adults’ feel more confident and knowledgeable about how to play with toddlers. An alternative explanation is that generally parents do not equate play with learning (Fisher, Hirsh-Pasek, Golinkoff, & Gryfe, 2008), therefore with the focus of the visit not being on learning the adults surveyed felt that it was more acceptable to play.

After the visit the adults were asked to reflect upon the benefits of the visit for their toddler. Many responses were given but the most popular were: a chance to play, socialise with other children and adults, acquire skills/gain knowledge, have a new experience, learn, have fun and role play. So, initially, adults brought their toddler to the children's museum to play and engage in hands on experiences but not really to learn. However, on reflection they realised their toddler was learning whilst playing and that playing and socialising were the main benefits for their toddler from the visit. It was also clear that the adults were very aware of what their toddler was doing and they were quite happy to join in with their toddler's play.

Results from Observations

For this part of the study 50 toddlers were observed playing for half an hour using the devised observation schedule. The observations were non-participant and occurred over a three-week timeframe. The observation schedule was found to be easy to use. Every five minutes the type of play the toddler was engaged in was recorded as well as the social nature of the play and whether the adult was assisting the child. The sample consisted of 24 boys and 26 girls aged from zero to 36 months with a mean age of 22 months. Across the sample children engaged in all the different types of play behaviour on the To.P.Mu.T. The most frequently occurring play behaviours were: exploratory play, pretend play, active play and role play. In addition, the toddlers tended to engage in more than one play behaviour during the observational period. Analysis of play behaviours looked to see if there were age differences in types of play. The statistic for reporting significance is a 2 x 2 Chi Square and these results are reported below.

Table 1 here

There was a significant difference in observations of pretend play between children aged younger than 22 months and those aged over 22 months, ($X^2 = 7.06$, $df = 1$, $p < .05$). Children who were younger than 22 months were less likely to engage in pretend play than children over 22 months of age.

Table 2 here

There was a significant difference in observations of role play between children aged younger than 22 months and those aged over 22 months, ($X^2 = 8.85$, $df = 1$, $p < .05$). Children who

were younger than 22 months were less likely to engage in role play than children over 22 months of age.

Table 3 here

There was a significant difference in observations of role play between children aged younger than 22 months and those aged over 22 months, ($X^2 = 5.13$, $df = 1$, $p < .05$). Children who were younger than 22 months were more likely to engage in ego play than children over 22 months of age.

Age differences in types of play would be expected from the literature (Hughes F, 2010) however the high frequency of ego play in very young toddlers represents a new type of play which this younger age group engage in. There were no differences in play behaviours according to gender. There were also no differences in adult engagement with their toddler according to age or gender. Adults interacted with their toddler during play by assisting their toddler and enabling play to develop or by initiating play behaviours with their toddler for example handing their toddler objects to explore. Unlike previous findings adults were quite happy to engage in role or pretend play with their toddler (Wolf & Wood, 2012).

One interesting point to note was that, as expected, the exhibits in the children's museum were arranged according to age but the toddlers paid no heed to this and played with all the exhibits even those designed for much older children. In addition, toddlers of different ages could be seen engaging in different types of play with the same exhibit reflecting the need for multi-purpose exhibits. An example of this was with the exhibit 'Hello, Pythagoras!' an exhibit providing opportunities for engaging and learning about mathematics and science and designed for use by older children. In this exhibit the children were able to look at themselves in the mirror (ego play), explore the objects provided (exploratory play), walk around (active play), surprise one another (communication play), create buildings with construction materials (creative play) and play with puzzles (problem solving play). Adults participated in this play by encouraging their toddler to play with the puzzles or create towers with other children and themselves (cooperative play) and explore objects alongside other children and themselves (associative and parallel play).

Discussion

This study was guided by three research questions. The first research question asked why adults visited a children's museum with a child aged 0-3 years. From the findings it would appear that the main reason for an adult to visit a museum with a toddler is to engage with their very young child in creative, innovative and experiential play activities. This is in accordance with the learning environment proposed by children's museums; that they are informal learning environments with the opportunity for children to engage in hands-on, active learning (Paris & Hapgood, 2002; Mayfield, 2005). Adults engage in these activities in a variety of ways including through play and, although they do not purposely bring their toddler to learn, they recognise, with hindsight, that learning has occurred. This contrasts with the literature which states that adults take their children to children's museums to learn and do not generally play with them once there (Luke & Windleharth, 2012). It also calls into question the aim of having educational objectives and facilitating questions for this age group (Henderson & Atencio, 2007; Wolf & Wood, 2012), as adults are not taking toddlers to museums with learning in mind. They are naturally playing and interacting with their children and recognising the learning engaged in afterwards.

The second question asked how children aged 0-3 years played in a children's museum. Using the taxonomy (To.P.Mu.T) and observation schedule (To.P.Mu.O.S) developed for this study has enabled this question to be answered. We have learned that toddlers do play in children's museums. They engage in different types of play including a type of play not previously identified in the literature, namely ego play, and in more than one type of play behaviour with the same exhibit. It has also been found that younger toddlers engage in more ego play and older toddlers engage in more pretend and role play, the latter finding not unexpected (Hughes F, 2010). Furthermore, it has been identified that toddlers are not age specific in their choice of exhibits to play with and will happily engage in different types of play with exhibits designed for older children. This potentially offers all children, both young and old, the opportunity to engage in social play with one another. This is in contrast with the suggestion and practice that exhibits should be age appropriate (Wolf & Wood, 2012).

The third research question asked how adults support toddler play when visiting a children's museum. Findings from both the survey and observations showed that adults interacted with their children in a variety of ways which supported their play and

development. As previously stated, a surprising finding was that adults engaged in role play with their child. Perhaps the particular setting enabled a sense of freedom and confidence so that adults felt enabled to engage in this type of play or that with the emphasis not being on learning adults felt it was acceptable. What was heartening to find was that whilst adults initially did not take their child to a museum to learn once they had played with their child and reflected on that play they could see the benefit and realised their child was learning. This has implications for future practice, not just in museums but also in educational settings. It may not be enough to explain to parents and carers the value of play for young children's learning. What may also be needed are opportunities for parents and carers to play with their young children in different ways and to have guidance on reflecting on the play so they can see through the eyes of the child and experience the learning for themselves.

These findings contribute to the recent research agenda for children's museums (Luke et al., 2014) This agenda states that further thinking and talking about play in children's museums is needed and the findings from this study provide a starting point for talking about toddler play, an under-researched area. In addition, the taxonomy and observation schedule are tools to enable shared discussion and further research in this area and has applicability for use when observing older children's play. The agenda also highlights the need to understand parents' perspectives when visiting children's museums and to identify strategies to support them. The results from this study contribute to understanding of parents' perspectives; why they bring toddlers and what they do with them. It highlights the fact, that for these youngest children, the purpose is not to learn but to play and that adults engage in play with their children but are able to realise the learning potential through play. Finally, the agenda identifies the learning environment as an area to be researched and, again, the findings contribute to this area showing that museums need to move away from age specific exhibits to ones that can cater for a mix of playful experiences for children of all ages as toddlers, in particular, ignore age constraints.

Conclusion

This study has investigated the under-researched area of toddler play in children's museums. A number of findings have been highlighted in relation to why adults visit children's museums with children aged 0-3 years and how they engage with them. It has developed a taxonomy of children's play, based on current play literature, to enable a shared understanding of play and from this an easy to use observation schedule has been developed to further observe and understand the play experiences young children engage in when interacting with exhibits in a children's museum. This study has contributed to the recent research agenda for children's museums in a number of ways as discussed above.

The context for learning in a children's museum has been described as an informal learning environment and this was how the toddlers and their carers used it. Although the aim of the visit was not to learn, carers recognised, after the visit, that this did occur through hands-on exploration and using all their senses. The toddlers played in many different ways and facilitated by adults as they played with them thereby enhancing the learning experience.

The Chicago Children's Museum provides a model for playful provision for children in children's museums through their Standards of Excellence in Early Learning document (Chicago Children's Museum, 2005). In that document they state that museum staff need to understand early years practice and act as advocates for the value of play in young children's learning and development. Hopefully, this study provides useful information in relation to toddler's play in a children's museum which will enable further understanding of early years practice and the provision of playful learning opportunities in museums.

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