Family Learning in Museums:

An Observational Study of the Handling Activities at the Horniman Museum

Figure 1. Masks and Discovery Boxes at the Hands-on Base room, Horniman Museum (Author, November 22, 2007).

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Abstract

Story telling, arts and craft, role play and handling sessions are some of the activities provided for families in museums. Museums need to come up with family provision since according to research families are the largest audience in these learning settings. The question here is whether museums provide meaningful family activities or rather these have been adapted from school sessions and therefore consider the child as the only learner in the family group. Families visit museums as social units and as such participate in museums’ activities or visit exhibitions socially. But the social agenda intertwines with the learning experience; families expect to learn something out of an outing to the museum. Family handling activities, for their social character, are here under scrutiny.

A family learning template which includes the learning behaviours families mostly engage in has been developed to investigate whether families are learning in the handling activities provided at the Horniman Museum, London. Further, the activities characteristics have been contrasted with those exhibit characteristics that better encourage families to engage in learning behaviours. The data retrieved shows that the Discovery Boxes activities are model family learning activities for enhancing social interaction, fostering learning and teaching behaviours and considering both adults and children as active learners.

Keywords: museums; families; family learning; handling activities
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1. Introduction

Museums have an interest in understanding who visits them. Demographic studies are carried out to find out whether youngsters, peer groups or families make up the core audience of the museum. Most of these demographic studies have revealed that families make up more than half of the museums’ audience, clarifying that families are the largest audience in today’s museums. Hilke (1989, p.101) asseverated that 50% of the museum visitors in the United States are families and similarly, for a family learning project, a group of investigators (Borun, 2002, p.254) found that families make up 62% of the weekend audience in this same country. McManus (1987, p.266) in a study this time in the Natural History Museum, London, found that 46.3% of the visiting groups were families.

Some museums developed child orientated activities for attracting families. Family activities were designed following the schools provision since schools were the focus of interest for museums some years earlier than families were. Some other museums showed a better understanding of the family audience and nowadays there is bigger concern among museum practitioners to provide activities and exhibits that serve families’ learning and social needs.

A family is a multigenerational unit that brings shared experiences along and that socially interacts in the museum setting. Research, as will be presented, has shown that the family functions as a social unit, and engages in quite predictable behaviours mainly, but not only, because children belong to the group and parents and caregivers engage in behaviours to facilitate their children’s learning.

Families are important for museums not only because they are the largest audience but also because they value both the social outing of the group and the learning opportunities the museum can provide. Families come to the museum to be together but also to learn together. Research (McManus, 1994) has also revealed that it is not enough to provide changing rooms, lockers, children menus in the Cafe, family corners, family trails and so on. Museum practitioners have to also provide meaningful activities for families, activities that indicate that they have been designed to target this multigenerational audience as a social unit and that consider both children and adults as active learners. It is thus
important, if the museum plays a role in serving the community, to adequately serve families through family activities that enhance the learning processes within the group.

My interest in families stems from the fact of having worked at the Horniman Museum in Forest Hill, London. The Horniman is a great place for families and for the community in general. The provision for families at the Horniman covers a wide range of possibilities; from family trails to craft activities. But most significantly the museum has a special room, the Hands-on Base room, in which families engage in learning and social behaviours. This special room, away from the main stream of visitors, houses in easy-to open display cases and discovery boxes, the handling collection.

In this study I evaluate the contribution of handling activities to family learning, providing an understanding of how these enhance learning behaviours within the family. In order to do so, first of all the literature review provides with an overview of how researchers have studied family audiences in informal learning settings and their main findings, suggesting a learning theory that naturally fits in the family learning experience as well as a family contextual learning model. The review of the literature also provides with evidence about family learning in museums, highlighting the learning behaviours families engage in at exhibits and at the same time the exhibit characteristics that facilitate the engagement of families in these learning behaviours.

Above all, the study attempts to analyse how the handling activities provided for families at the Horniman Museum contribute to family learning taking a case study approach. First of all, observations of family behaviours were carried out in 4 family handling activities. This was inspired by the largest research project developed on family learning until now: the Philadelphia/Camden Informal Science Education Collaborative (PISEC)\(^1\) family learning project, which I shall discuss in detail in the chapter dedicated to family learning behaviours. In order to undertake the observations a family learning template was developed which contemplates those behaviours that according to research most likely indicate learning among family members. Moreover, the observations were followed by an

\(^{1}\) Four Philadelphian institutions; the Franklin Institute Science Museum, the New Jersey State Aquarium, the Academy of Natural Sciences and the Philadelphia Zoological Garden joined in partnership to investigate family learning in science museums. The project was funded by the National Science Foundation and published as Family Learning in Museums: The PISEC Perspective.
analysis of whether these activities were designed having present the 7 family learning enablers suggested by the PISEC group.

The family learning template developed in this piece of work could be used by other researchers as a tool for not only evaluating object-based family sessions and activities in museums but also for their facilitation. Until now, research has focused on family behaviour and learning in exhibits whereas I suggest that a more appropriate context for family learning is provided in special rooms such as the Hands-on Base room at the Horniman Museum. According to White (in McManus, 1994, p.92) the discovery room is a place where families can feel they are having a family experience while working together in activities unavailable in the traditional halls of the museum.

To further analyse the contribution of these sessions to family learning at the Horniman Museum, the analysis of the family behaviours and the activities characteristics was followed by a deep analysis of internal documents, interviews and informal chats. This facilitated a comprehension of whether the staff and the written documents fully support the provision and evaluation of family learning.

Since I was interested in finding out whether family activities that involve object handling had been designed having in mind family learning outcomes in the museum sector, I sent a request to the Group for Education in Museums mailing list. The Head of Access and Learning at UCL Museums and Collections was the only that responded with a valid example and thus the last chapter is devoted to the hands-on family activities this museum provides. The example has been added to better contextualise the topic and to show a different approach to family learning with the end of concluding that family handling activities developed from an understanding of how families learn can only further enhance learning behaviours among family members.
1.1 Value of the research questions

According to Briseño-Garzón (2007, p.301) family learning research in informal settings has consolidated as a discipline within visitor studies over the last two decades. Previous studies (Blud, Diamond, Hilke, McManus) of family learning in museums have documented the typical behaviour of family groups coding and describing behaviours of families in mainly science museums. Diamond (1986) observed families in the Exploratorium and in the Lawrence Hall of Science both in California, McManus (1987 and 1988) undertook her observations in the Natural History Museum in London, Hilke (1989) in an unknown but large metropolitan Natural History museum and Blud (1990) in the Science Museum in London. While many aspects of family visits to art museums (Sterry and Beaumont, 2006, p. 222), and to anthropology museums, remain unexplored. An early exception is Cone and Kendall (1978) who observed families at the anthropology Hall at the Science Museum of Minnesota.

Thus, the majority of research has focused on the nature of family learning in science centres. Moreover, and according to McManus (1994, pp.95-6) the largest studies of families have been in zoos (i.e. Rosenfeld study of family interactions at the San Francisco zoo in 1980) or in aquaria (i.e. the more recent work of Briseño-Garzón et al. in 2007).

Researchers have also mainly used learning-related behavioural observations of families, interviews, analysis of conversations and cognitive tests. Unobtrusive observations (McManus 1987 and 1988) are now preferred to accompanying the family through their whole museum visit (Diamond, 1986). Behaviour was coded and the main aim of the investigation was normally to understand what families had learnt from an exhibit.

Taken together, these past studies provided valuable information on the way families interact, behave and learn in museums. However, they did not provide a theoretical framework for their findings. This piece of work suggests a family contextual learning model and a socially-situated theory in which learning behaviours observed in families when seeing an exhibit fit naturally. Moreover, this research provides an observation of family behaviours when engaged in handling activities instead of when looking at exhibits, providing thus originality.
2. Aims and Objectives

The aim of this research is to critically assess the potential and actual contribution of museum handling activities to family learning. And there are 4 objectives which are:

1) To outline theories of family learning in museums and identify the main characteristics of this learning as opposed to other kind of learnings

2) To critically examine available evidence about family learning in museums

3) To examine practice of actual handling activities and assess their contribution as an aspect of family learning

4) To analyse family handling activities at the Horniman Museum, taking a case study approach, and assess their contribution to family learning

3. Methodology

This study utilised various qualitative research methods to achieve a common goal; to assess the contribution of handling activities to family learning in a museum setting. Behavioural observations, interviews and analysis of archival data have been essential to this piece of work. Such data collection tools are considered as valid sources of data for a dissertation research (Rudestam and Newton 1992, p.70) and have provided with data of real practice whereas the literature review determined an understanding of the current and past academical approaches to family learning in a museological context. Before any observations were taken, an extensive review of the literature took place. This was due to the fact that the literature informed the development of the most important tool in this work; the family learning template.

3.1 Literature Review

The vast majority of research carried out on family learning has been in the form of observational studies of families behaviour in museums and other informal learning settings (Blud 1990, Borun et al. 1998, Briseño-Garzón et al. 2007, Brown 1995, Cone and Kendall 1978, Diamond 1986, Hilke 1989 and McManus, 1987, 1988) and at home
Families were observed to identify what strategies they adopt for learning (Hilke, 1989), which behaviours families engage in (Diamond, 1986) and which exhibit characteristics enhance family learning (Borun et al., 1998).

The main set of articles included in the sources of this piece of work belong to a compilation of writings by Barbara Butler and Marvin Sussman, *Museum visits and Activities for Family Life Enrichment*. The articles compiled give a broad overview on family programs and family learning and a theoretical framework. The works were based on a revision of learning theories in museums (Kropf and Wolins, 1989), on visitors’ behaviour research theory (Leichter et al., 1989) and on families’ behaviour observations (Hilke, 1989).

Form the observational studies and the previous literature reviews (Borun, et al., 1995, Dierking, 1992 and Kropf, 1992) the main topics that arise and shape the structure of this work are concerned with the reasons why families’ visit museums, the behaviours families engage in, the learning strategies families adopt and the learning theories and models that can be applied to family audiences.

### 3.2 Case- Study

The main strategy adopted in this work has been in the form of case study. The aim of taking a case study approach was to assess the contribution of the Horniman’s handling activities to family learning and to evaluate the Horniman’s policies and staff support of multigenerational learning. This was considered as a suited method since I was part of the staff team for a period of 6 months. During this period I first undertook a work placement in the anthropology section and after I was employed to collaborate with the documentation department.

Yin (1998, p.1) explains that as a research strategy, the case study is used in many situations in which all of them have in common the desire of understanding complex social phenomena. This applies very well to the subject of this research which is to understand family learning in the social situation of participating in a museum’s activity. As Jocher (1928, p.205) explains ‘the case method implies an intensive research of the subject, (…)
facts are obtained from documents, from the individual himself, from members of the group, or from anyone who may have any knowledge relative to the study under investigation’. In this case, internal documents and interviews with central subjects (the Community Education Manager, Georgina Pope, and the educators that facilitate the family activities) have been axial to support the research’s objectives.

3.2.1 Email Interview

The interview to Georgina Pope, took place at the very end of my time as staff member at the Horniman Museum and after participating in 4 family handling activities. The interview’s main objective was to evaluate existing policies in support of family learning and to find out what approach the Education Team takes regarding family learning provision. Also to ascertain what documents (i.e. education policies, learning objectives and so on) have been produced to support multigenerational learning in the handling activities. The questions were sent via email on 28 March and the answers were received on 15 April 2008 (see Appendix 1).

3.2.2 Semi structured conversations and email communications

I exchanged informal chats with 5 of the educators at the Horniman that deliver family activities before and after participating in them. A set of questions was sent to them via email (see appendix 2) to also incorporate the educator’s view and to thus have a more accurate understanding of these sessions. The aim of this was to find out what the educators understand by family learning and how they believe it takes place in the sessions they deliver.

This informal approach stemmed from the fact that I was at that time a member of the staff. I was wearing my badge when participating in the family activities; this meant that I could approach all the educators very easily as they were my colleagues and also the families since they saw me as a member of staff.
3.2.3 Participant observations

I participated in 4 activities (3 Hands-on and 1 Discovery Boxes) which took place in the Hands-on Base room at the Horniman Museum during 3 different weekends and during the February 2008 half term holidays. I evaluated these 2 kinds of activities from the perspective of the visitor from what I observed whilst participating in with them. This was considered to be the most effective way of gathering first-hand and reliable data (Sterry and Beaumont, 2006, p.232).

From the informal-learning literature review on families in museums, I distilled a set of characteristics that may indicate learning among a family group to create a family learning template (see Table 2, p. 31). I participated in the sessions with a copy of the family learning template I had developed in order to record conversations, behaviours and interactions heard and observed among family members. Some notes were taken while the activity was taking place whilst others were added immediately after the session. This way of recording data was the most appropriate to collate as many behaviours as possible and to avoid being an obtrusive participant.

The method was supplemented by contrasting notes from observations with the literature on families’ behaviour in museums as well as with what the educators at the Horniman had observed from the activities they deliver. Moreover, the 2 kinds of family activities, the Hands-on and the Discovery Boxes, were contrasted with the 7 enablers of family learning that the PISEC researchers (Borun et al., 1998, p.23) had arrived at. Thus, the experience of the activities was approached from three separate aspects of evidence, achieving triangulation.

Nonetheless, I was aware of the possibility of personal bias the case study method can imply. As Katharine Jocher reflects, ‘personal bias is present not only when one is securing contemporary data through personal interviews but can be just as evident when one is using documentary sources’ (1928, p.208). However, the overall methodological approach taken in this study ensures that the case study is contextualised within theory and literature around the subject, and has both validity and integrity.
3.2.4 Case study summary

The tasks at the Horniman Museum were carried out as follows:

1. Participated in the Hands-on Puppets activity (22 December 2007)
2. Had an informal semi-structured conversation with the educator that lead the session (22 December 2007)
3. Collated internal documents; Learning Policy, Educators Guidelines, etc… from the Horniman’s Museum Notice Board (February 2008)
4. Participated in the Hands-on Music from India activity (17 February 2008)
5. Participated in the Discovery Boxes activity (21 February 2008)
6. Had informal semi-structured conversations with the educators that lead the Discovery Boxes activity (21 February 2008)
7. Participated in the Hands-on Africa activity (8 March 2008)
8. Questions on family learning making reference to personal experience were sent to the educators at the Horniman (23 March 2008)
9. Interviewed the Community Education Manager Georgina Pope via email (15 April 2008)

3.3 Specialist Input

To examine the practice of handling activities in the UK I sent a request through the Group for Education in Museums’ (GEM\(^2\)) practitioners mailing list on 20 February 2008 asking for examples of handling activities designed for families in which family learning was encouraged (see Appendix 3).

A reminder to the GEM mailing list was sent a week later. However, very few practitioners, 2 out of 1148\(^3\), answered the family learning’s request making me consider that it may not be common practice to have separate learning objectives for children and for adults and that very few family activities which involve handling of museum objects are developed within a family learning framework. Moreover, 12 practitioners showed interest in receiving the answers that I collated from the request. It appears that there is an interest in the

\(^2\) GEM is an organisation based in the UK that promotes learning through museums and represents 2,000 museums and galleries professionals in the UK and worldwide (GEM, 2007).

\(^3\) At present time (28 April 2008).
museum sector to facilitate adequate family activities; activities that are not only child focused and that promote family learning, but that the field still needs further development.

Nevertheless, Celine West, the Head of Learning and Access at UCL Museums and Collections, replied explaining the kind of work they are undertaking with families using their handling collection. A set of questions was sent to her to better understand the role the adults play in these sessions and the family approach adopted in them (see Appendix 5).

4. Literature Review

4.1 Main themes’ context

Families have been of interest to many museum researchers from various perspectives. Researchers have studied how families behave, how families learn, what families learn, what exhibits enhance family learning, and the role of the parents in this collaborative endeavour. Because of the interest of families within visitor research studies, there have been other previous literature reviews on family behaviours in museums (Borun et al., 1995, Dierking, 1992 and Kropf, 1992). These failed to present a whole picture of the family museum experience, focusing mainly on family behaviour or on which museum exhibits enhance or inhibit learning. Subsequent works have been published of importance for this study and have brought new light to the topic. For instance such is the case of Briseño-Garzón A. et al., (2007), whose research focused on the role of the adults in the family group not just as facilitators/enablers of learning for their offsprings (as many previous researchers did), but also as individual learners themselves.

A more detailed observation of these previous studies built the foundations for the topic under investigation and contextualised the present work. The literature review has provided with an understanding of how families learn in the museum setting, how this learning can be enhanced by the development of specific family programmes and activities and an understanding of family learning theories.
4.2 Why do families visit museums?

Whether families visit museums to spend a day out (as a social outing) or to learn something new (as an educational activity), has been discussed by a number of authors (Blud, 1990, Borun, 1995, Borun et al., 1998, Dierking, 1992, and McManus, 1994).

The PISEC researchers used focus groups for their 3 year investigation discussing with families about museums and other leisure time activities. Families reported enjoying visiting a museum because it implied doing something together and thus ‘building shared memories’ (Borun et al. 1998, p.21). In agreement with this finding, and according to Kropf (1992, p.222), many researchers found that learning was not the main reason given by families to visit a museum.

Families may see the visit to the museum as a social outing but they do engage in learning and teaching behaviours. As Dierking (1992, p.218) puts it, families also come ‘to do the museum’, and by doing the museum the author means engaging in reading labels, participating in the museum’s activities, and expecting to learn something new.

Some families may have expressed that they go to the museum to spend some time together with the children, to enjoy themselves and to share new experiences and did not mention to learn because they may be associating this learning with school or formal learning. Nevertheless, as Dierking (ibid.) pointed out, many families also expect to learn something when they ‘do the museum’.

It appears that many researchers have not looked at the differences in preferences inherent in families. Some families may prefer to have some fun and to spend time together in the museum and end up learning because learning is somehow unavoidable in a museum setting and because they engage in social behaviours, while others may have a clear agenda for learning. The former type of families, according to an educator at the Horniman (anonymous, pers. comm., 21 February 2008), come to the handling activities to have fun, and not to learn but because they engage with objects so closely and handle them, they actually learn. The second type, the families that bring to the museum a learning agenda, may already know which exhibit is of their interest or what activity they want to participate in and may have been talking about it at home, prior the visit to the
museum. For the former, museums need to come up with ideas which will let families to be social together. Dierking (1992, p.218) points things such as discovery rooms, participatory exhibits and special programs that allow families to do something as a group; for the latter, the possibilities of family education go beyond the museum walls. That is, museums should start thinking about actively developing resources prior and after to a visit (i.e. sets of questions or activities’ sheets).

In brief, families may have a double agenda when visiting a museum (McManus, 1994, p.83 and Wolins, 1989, p.10); they expect some kind of enjoyment as a social group alongside an informative and educational experience. Instead of looking at it as a dichotomy, museums should understand how these two expectations can complement each other and how social interaction facilitates learning.

### 4.3 Defining family in a museum context

Since this study looks at families in a museum context, it is important first and foremost to clarify what working definition of ‘family’ researchers have used in the past and how this definition may have varied in more recent studies. Most of the researchers agree that a family is an intergenerational or multigenerational group. Borun et al. (1996, p.124) defined family as a multigenerational visiting unit of no more than 6 members, with at least one adult and one child between the ages of 5 and 10 years. Later, this was refined to a ‘small’ multigenerational visiting group (Borun, 2002, p.246).

Other researchers, however, when defining family, preferred to highlight the fact that a family is a mixed group of different ages that interacts and behaves socially in a museum setting (Diamond, 1980), forming thus a social unit (McManus, 1994, p.81). Following the social aspect of the definition, Dierking (1992, p.215) supports the view that families could be described as a social group of at least one child and one adult. Dierking (ibid.) consciously doesn’t specify any relational bonds among the group members when defining family as previous researchers did⁴, because she is aware that in the 20th century families include single-parents, blended families, extended families and co-parented families.

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⁴ Cone and Kendall defined family as a ‘parent-child group’ (1978, p. 246)
What is most important from an educational point of view is that families are a multigenerational unit. While Henderson and Watts (2000, p.41) believe that members in the family group may differ in interests, attentional levels and intellectual and physical approaches to the subject, Hilke (1989, p.118) mentions that each family group has individuals who are generally more knowledgeable and skilled (the parents) and individuals that are less knowledgeable and skilled (the children). It is this latter approach that has made some researchers assert that adults don’t learn in family groups’ experiences but rather facilitate their children’s learning processes (Wood, 1990, p.20). On the other hand, and according to Morgan and Sebolt (1978, p.29), such differences in values, perspectives and experiences make the family group very rich. Thus, family group members differ in many aspects; knowledge, experience, skills, but commonly they bring along a shared culture and a whole bunch of shared experiences to the museum visit.

Having summarised key points on the meaning of family in an informal learning environment, it is reasonable to adopt a definition that embraces both the social aspects and shared experiences of the group and the fact that the individual museum experience will be a new one which will be added to the existing ones. Thus, a family that visits a museum is a multigenerational unit that brings shared experiences along, that socially interacts and that once the visit is over, remains together. The fact that families may share shelter, or at least may share other experiences as a social group, was already mentioned by Kropf and Wolins (1989, p.75). The authors characterised a family as a given group of individuals, whom have a strong and continuing relationship that goes beyond the museum visit.

4.4 Families’ behavioural characteristics

In the context of the informal learning setting, families are characterised as groups that behave differently if compared to school groups or other peer groups (McManus, 1994) and that engage in quite predictable behaviours (Falk et al. 1985 in Dierking, 1992, p. 217 and Hood, 1989).

The most common behaviour of families visiting museums is to pass through the exhibits without changing the family’s pace, thus giving just a glance at the majority of the exhibits only stopping every now and then. This behaviour has been given different names.
Diamond (1986, p.144), in her study of families visiting the Exploratorium and the Lawrence Hall of Science in California, observed that families ‘shop around’ in search of exhibits or objects that are of interest to them, reporting that a total of 57% of the families observed, spent less than a minute in each exhibit. Hilke (1989, p.126) calls this behaviour ‘move-on looking’ and describes it as a ‘visual exploration’ of the subject when the individuals move from one exhibit to another.

Amongst the most typical behaviours of family groups in exhibits, Diamond (1986, p.145) noted: approaching an exhibit, manipulating it, observing someone else manipulating it, and then withdrawing. She (Ibid., p.148-9) also observed teaching behaviours, in both verbal and non-verbal ways, including the teaching behaviour of ‘to show’, which was observed in 13% of the families, and the teaching behaviour of ‘to tell’, observed in 9%. Other behaviours detected which occurred less frequently included: naming, describing, questioning, reading graphics and reading aloud.

Diamond was one of the first investigators in studying family behaviour at exhibits whose work stemmed from a series of observations of the whole-visit of different families and whose focus was on the visitor rather than on the exhibit itself. Diamond approached the families and asked for permission to accompany them during their visit in order to record the behavioural relations amongst parents and children. The behaviours recorded were further analysed using a quantitative method (1986, p.140). Although in this investigation the author maintain that it is necessary to study and observe the whole visit of a family (from when they enter the museum until they leave) in order to understand whether learning is taking place or not, she does not give any reasoning as to which of these behaviours my have lead to learning. Nonetheless, two findings from Diamond’s work have been of great importance to the field of family visits to museums. Firstly, she concluded that social interactions at exhibits stimulate cognitive processes (Ibid. p.152) and secondly, that parents and children display different behaviours while in the museum visit. Regarding the latter, Diamond (Ibid. pp.148 and 153) noted that parents employed both telling (i.e. reading aloud graphics or texts as a way of teaching the exhibit phenomena) and showing behaviours significantly more often than children, whereas children manipulated exhibits more and tended to give explanations about the location, functioning and description of the
phenomena. Thus, even though she found teaching behaviours in both children and adults, a more prominent teaching behaviour in the adults sphere was detected.

This opinion was partially challenged by Hilke (1989, p.120) who believed that the differences he observed between children and adults behaviour were so subtle that parents teaching agenda did not dominate during the visit. The teaching behaviours observed responded rather to a cooperative agenda of first-hand information exchange and in fact Hilke (Ibid.) found that children and adults spent the majority of their visit initiating their personal behaviours.

Nonetheless, when Hilke (Ibid., p.121) analyses the small differences found in the adults’ behaviour (i.e. adults offered more interpretative comments than children) and puts it together with the fact that parent’s have a relatively larger amount of knowledge and skills which are potentially transferable or ready for exchange, he claims that parents were more actively facilitating the learning of their children than were the children facilitating the learning of their parents.

When compared to other museum groups, families prefer interactive exhibits to traditional ones (Blud, 1990, p.43, Brown, 1995, p.65 and Hilke, 1989, p.123), after the preliminary ‘shopping around’, families choose an exhibit that most interest them and spend more time with it (Kropf, 1992, p.222). Families engage in longer conversations (McManus, 1994) and discuss exhibitions from previous experiences (Borun et al., 1996 and Hilke, 1989). Families engage in social interaction (Dierking, 1992, p.218) and support each other’s learning (Hilke, 1989, p.102).

4.5 Families’ learning behaviours

It is reasonable to question whether these behaviours observed lead to any immediate or subsequent learning processed by the family members. In order to explore this, it is necessary to further present the work of Hilke (1989), who showed a different approach when investigating families’ behaviours in museum settings. Hilke (Ibid.) found that families’ behaviour attending a museum did not depend only on the family itself but also on the museum exhibits characteristics and thus he carried out observations in two different museum environments; one in a participatory room (with lots of hands-on opportunities
where objects could be handled) an another one in a traditional room (with objects in glass show-cases).

From the observations taken in a large metropolitan Natural History museum, Hilke (Ibid. p. 110) suggests that families mainly engaged in 4 behaviours: pure information (i.e. gazing, manipulating, asking for information and making analogies), experiential (i.e. relating the exhibit’s content to personal experiences or to personal feelings), interactive (i.e. behaviours which imply interaction with other members) and transitional (i.e. moving to another room/exhibit) behaviours. When discussing whether these behaviours are learning-related, the analysis is less convincing. Hilke does not give a correlation of which behaviour lead to learning but instead assumed that all behaviours observed did. Nonetheless, he (Ibid., pp.114-118) gives a satisfactory overview of the personal and cooperative learning strategies that members in the family group adopted; pointing out that the most common observed individual strategy for making sense and therefore learning from an exhibit was to acquire first-hand information. This behaviour was complemented by a ‘spontaneous sharing of information with other group members’ (Ibid., p.118).

Regarding the different settings, a traditional and a participatory one, where the study took place, Hilke (Ibid. p.124) observed that families showed a preference for the ‘hands-on’ exhibits and attributed this preference to the fact that they valued very much being able to touch and manipulate. On the other hand, he (Ibid., p.126) also observed that family members spent more time in the traditional displays than in the hands-on exhibitions where objects could be handled, because they relied on each other for further interpretation of the objects (since they did not have the possibility of manipulating them) and therefore engaged in longer conversations. However, Blud (1990, p.50) observed that families spent more time in the interactive exhibits in the London’s Science Museum because these exhibits were more successful in stimulating discussion between adults and children than other kind of exhibits. This piece of research also challenges Hilke’s viewpoint because it argues that facilitating hands-on opportunities, and thus catering for different learning styles\(^5\), makes families feel more welcome, engage in more discussions and in more learning behaviours.

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\(^5\) Hein (1998, p.24) explains that since learning is an active process there are different kind of learners and learning styles but that certain type of activities (as the hands-on) lend more readily to one learning style (i.e. bodily/kinaesthetic).
Nevertheless, the main conclusions reached by Hilke and Blud provide the museum field with a better understanding of the family learning experience. Hilke (1989, p.124) claims, following his observations, that families are capable of adapting their teaching and learning strategies to meet the demands of many situations and that thus the family emerges as a 'highly responsive and flexible learning system'. And Blud (1990, p.50) further suggests that interactive exhibits are educationally more effective and may facilitate learning since they provoked more discussion among family members. It is then reasonable to conclude that the learning experience in the museum depends not only on the families’ strategies adopted to pursue learning but also on the exhibits characteristics the families encounter with.

The scholars cited above (Diamond, Hilke and Blud) assumed that if the observable behaviours which are normally associated with learning in a museum setting (asking questions, answering questions, reading labels, carrying conversations about the exhibits and as pointed, even just gazing) were frequently shown (in high percentages), it meant that families were engaging in learning behaviours and that therefore learning was taking place. Whether any of the behaviours or strategies positively resulted in any learning was first examined 10 years after Diamond’s findings by the PISEC group. The PISEC family learning project set to investigate a correlation between the behaviours observed in families and an independent measure of learning (Borun et al. 1995, p. 264). In other words, they investigated whether families that appeared to be learning were really learning.

4.5.1 The PISEC Family Learning Project

The PISEC (Borun et al., 1998) family learning project was a 3 year project developed in 3 phases by different researchers in 4 Philadelphian institutions; The Franklin Institute Science Museum, The New Jersey State Aquarium, The Academy of Natural Sciences and the Philadelphia Zoological Garden. Their main research objectives were to identify and measure family learning in science museums, to find a correlation between learning and specific exhibition characteristics and to understand how exhibits best can enhance learning among family groups (Borun et al., 1996, p.123).
From the set of learning objectives for each exhibit where they observed families, the PISEC investigators (Ibid., p.124) arrived through discussions, at 3 levels of learning. These increased in complexity of understanding the exhibition’s information and included identifying (i.e. names what the exhibition is about), describing (i.e. makes connections to personal experience based on visible exhibit characteristics) and interpreting and applying (i.e. makes connections of exhibit concepts to life experiences).

129 families were observed and data collectors coded 4,757 instances of 13 behaviours (which were previously also agreed by the team as behavioural categories for observation). Families were interviewed after their visit and observations were recorded. Individual cognitive tests were not considered because the researchers were interested in group (family) learning. The data obtained from the observations and the interviews was entered in a relational database which compared the frequency per family of performing any of the 13 behaviours with the 3 learning levels.

The most important conclusion reached by the group of researchers after analysing the data was that some of the behaviours observed distinguished between successive learning levels and therefore were classified as performance indicators (Ibid., p.134). That is a comment regarding an exhibition can be made which implies both the identification of a characteristic of the exhibit and the connection of this characteristic to personal experience. For example, an exhibit that is about musical instruments from India prompts the individual to comment on how many strings a sitar has and relates it to the string instrument that she or he plays. According to the PISEC authors (Borun et al. 1998, p.51) the performance indicators included: asking a question, answering a question, commenting on the exhibit (including commenting on how the exhibit works) and reading labels aloud and silently.

In summary, the PISEC group (Borun et al., 1996, p.136) claimed not only that families do learn from exhibits and that the level of learning is related to specific observed behaviours but also that what distinguishes family learning is the concept of ‘potential learning’. The concept implies that the information acquired by a member of the family is potential information to be exchanged in other situations in the near or far future. This is of great importance to the aim of this research since what is at stake is exploring whether families are learning through handling activities in museums.
It might be then that researchers need to bear in mind two considerations. First, in accordance with the PISEC authors, that the information acquired in a museum exhibit/activity might be stored and be used in future situations (and therefore is very difficult to discover or analyse in any situational family learning research). Secondly that, any such information, skills or knowledge acquired will have to be necessarily reinforced with other events for the learning process to be fully completed (Dierking, 2002, p.10 and McManus, 1994, p.94). Previous researchers have focused on the immediate learning that families can get from exhibition visits, and have therefore not provided a holistic approach to family learning in museums. If the PISEC project had had a 4th phase, it is reasonable to conclude that they would have also investigated the implications in learning that an exhibit visit has in the families’ future conversations and activities.

Still, the PISEC research group provided museum practice with a list of 7 characteristics that successfully facilitate family learning (see Table 1). This list has been contrasted with the family handling activities’ characteristics at the Horniman Museum to analyse if they provide these enabling factors for family learning to take place. However, one more characteristic was considered that relates to the previously mentioned fact that learning only takes place if the experience or information acquired is reinforced with other experiences or other information (Dierking, 2002, p.10). This refers to whether the activities facilitated any activity sheet to be taken at home, supplying then this reinforcement of experiences and thus facilitating the learning process.

Table 1- 7 enablers of family learning (Borun et al., 1998, p. 23)

<table>
<thead>
<tr>
<th>Multi-sided</th>
<th>Family can cluster around the exhibit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-user</td>
<td>Interaction allows for several set of hands (or bodies)</td>
</tr>
<tr>
<td>Accessible</td>
<td>Comfortably used by children and adults</td>
</tr>
<tr>
<td>Multi-outcome</td>
<td>Observation and interaction are sufficiently complex to foster group discussion</td>
</tr>
<tr>
<td>Multi-modal</td>
<td>Appeals to different learning styles and level of knowledge</td>
</tr>
<tr>
<td>Readable</td>
<td>Text is arranged in easily-understood segments</td>
</tr>
<tr>
<td>Relevant</td>
<td>Provides cognitive links to visitor’s existing knowledge and experience</td>
</tr>
</tbody>
</table>
4.6 The adult’s role in the family learning experience

Before moving to the family learning theories, it is important to come back to the previously stated point of the adult’s role as a teacher, interpreter or facilitator, to understand how this belief has evolved with recent research. Crowley and Callanan (1998) investigated the different experiences a child has when accompanied with his or her parents and when alone and, similarly to what Hilke and Diamond pointed, observed that the parents’ involvement in the children’s experience actually facilitated their learning. It appears that when children were accompanied by the adult parent, they explored the exhibit more intensely, they began interpreting actions, they had a richer set of experiences and they talked about what they were doing while exploring the exhibit (Crowley and Callanan, 1998, p.15). Nonetheless, recent research (Briseño-Garzón et al. 2007) indicates that adults also learn in informal settings and that they are active social learners and not mere facilitators of children’s learning.

What then do adults learn from informal setting visits with their children? According to some authors (Briseño-Garzón et al., 2007, p. 308) they learn about the family interactions and about the personalities of different family members. Rosie Fuller (pers. comm., 11 April 2008), an educator at the Horniman Museum, stated that families learn from the collections –learning new things about the objects and the places and ideas they represent- but that equally they learn from each other and about each other; adults learn about interacting with each other in the family group and about sharing and cooperating. Moreover, another educator (anonymous, pers. comm., 21 February 2008) manifested that adults also learn about how their children interact with museum objects or what their children know about a specific subject. Thus, the question here is, can museums encourage parents to facilitate their children’s learning while also participating as active learners?

In summary, from the literature on family learning in museums, the main points discussed are that families come as a unit to the museum, engage in conversations and learning experiences, learn not only from the objects but also from social interaction (from the communication individual-individual and not only from the exhibit/object-individual communication), from prior knowledge an individual might have and from the previous experiences the subjects in a family group have had. What families learn or experience in
the museum continues in other settings and when engage in other activities, making the family learning experience a protracted process across time.

Finally, in families’ visits to museums or in families’ participation in museum activities, children also bring previous individual knowledge to the museum visit and parents confront with new information related to objects. Thus, both adults and children emerge as learners in a museum setting.

4.7 Theories and model of (family) learning

Following the critical analysis in the previous section, it is necessary to ask whether all the behavioural characteristics of families described above fit into any theory or whether alternative theoretical models of learning need to be developed in order to better understand the complexity of family learning in museums.

Early theories of learning (behaviourists, developmental psychologists and cognitive scientists) understood learning as an active process in which the learner constructs meanings. They suggested that the information is organised in schemata (organising frameworks) and that new connections to previous knowledge are made whenever a new concept is introduced in this system of frameworks (Dierking, 1996, pp.21-23). Hence, these learning models focus on the learning of concepts and facts (acquiring information and concepts) and on how these concepts are re-organised in the individual’s existing knowledge. However, they neglect the surrounding factors that may affect the individual’s learning processes such as where the subject is and by whom the individual is accompanied by and consequently how the individual’s experience is affected by another individual’s input.

In accordance with these early theories, constructivism refers to the idea that learners construct knowledge and meaning for themselves (Hein, 1996, p.30). Moreover, constructivist learning theory acknowledges the fact that knowledge is not only built up with time but also reinforced with time.
4.7.1 Constructivism and museum education

Hein (1996) established a relationship between the principles of constructivism and museum education which will help a consideration of whether or not family learning naturally fits into constructivist thinking.

Hein (1996, pp.32-34) describes the constructivist museum as one that has exhibits and programmes that:

- Provide ‘hands-on’ opportunities which are also ‘minds-on’ (implies that the construction of meaning is mental)
- Encourage visitors to discuss and to find out together (implies that learning is a social activity)
- Don’t have a fixed path to follow and provide different entry points, various sensory modes and different kind of stimuli (implies that learning is contextual and that one learns in relation to what one already knows)
- Find the right level in which to engage the learner (implies that in order to develop further knowledge, to ‘build-on’ or ‘add-on’ knowledge, one needs to have a structure developed from previous knowledge)
- Provide additional resources to be taken at home (implies that learning occurs with time and that one needs to revisit ideas for a significant learning experience)

It appears that even though the constructivist museum takes into consideration that learning is a social activity, it mainly focuses on individual developments and on individual constructions of meanings. The constructivist model of learning puts emphasis on the individual learner interacting and constructing meaning with phenomena (Hein, 1998). In the constructivist theory of museum learning the social group is seen as cluster of individuals rather than as a group that interacts and mutually constructs meaning.
An alternative to the constructivist learning approach is the socially-situated or collaborative learning theory. The latter sees the museum learning as a social process and hence understands the concept of family learning in a museum setting as a process that incorporates all the group members' inputs (in a collaborative effort). As the PISEC project researchers (Borun et al. 1996, p. 135) explained when developing their study:

Another important aspect of this study is the concept of family learning. While learning happens in individual brains and is perhaps best thought of as a change in the person’s neutral set, there is also a group effect. The individual’s learning experience is enhanced and shaped by input from other family members. Families have a culture of shared knowledge, values and experiences. A family group that visits a museum can enrich its culture, storing knowledge for later sharing among family members.

It is thus important to see the family’s museum visit as an experience in which the individual’s inputs to the group have to be considered among as well as many other factors that have an impact on the learning process. This is what Falk and Dierking (in Dierking, 2002, p. 6) suggested when they developed the Interactive Experience Model which later was redefined as Contextual Model of Learning.

In this model, the learning experience of an individual is influenced and framed by 3 overlapping contexts: the personal context (what the individual already knows and his or her motivations and interests), the social context (whom the individual comes with) and the physical context (where the learning experience takes place). This model needs to be contextualised within the dimension of time; learning is constructed only over time and meanings are layers which are piled up. As it has already been suggested, and according to Falk and Dierking (Ibid., p.10), experiences need to be reinforced with other experiences (enabling contexts) for learning to take place.
The family contextual model of learning (that is, the contextual model of learning applied to families learning experience in the museum, see Figure 2) would be one in which both the adult’s and the child’s personal contexts are intertwined. In which, the social context would correspond to the family group and the physical context to the museum, and the objects within it. In this last sphere, it would then be important to see in which context the individuals interact with the objects (whether the objects are placed in glass cases or instead they are in special rooms, like the Hands-on Base room at the Horniman Museum, where objects can be handled). And the enabling contexts that will come within weeks, months or even years refer to other family group experiences as it could be the family’s visit to the zoo, the family’s conversation with other relatives or the family’s attendance to a play in the theatre.

Figure 2. The family contextual model of learning (the contextual model of learning by Falk and Dierking (Dierking, 2002) applied to families’ learning experience in the museum).
Within this learning context, it is reasonable to state that the individual’s experience when visiting a museum in a family group differs very much from when visiting with other peers or in the case of children, with school groups. It is the immediate share of exhibition information, the previous knowledge that each individual brings to the museum visit, together with the PISEC’s ‘potential’ information that will be shared in other situations that makes the family experience in museums very rich. As McManus (1994, p.91) put it ‘the family work collectively to build a family perception of the communications from the museum’.

Having said this and having summarised the behavioural attitudes of families in museums in a previous chapter, it appears that a socially-situated or collaborative learning theory better contextualises family learning activities in museums. Handling family activities fit more naturally on collaborative or socially-situated models of learning than on the constructivist learning theory in museums and research adopting the exposed family contextual model of learning would lead to further understanding of how the learning processes within a family group can be enhanced by meaningful activities.

5. The Handling activities for families at the Horniman Museum

5.1 The family learning template

In order to analyse the family interactions at the Horniman Museum’s handling activities, a family learning template was developed (see Table 2, p.31), based on both practical studies and learning theory. In the template the learning behaviours were divided into three groups for two reasons; to facilitate the process of note-taking and to give a better picture of the commonalities and differences observed in the activities.

In the first group, those behaviours derived from social interaction and collaborative learning including collaboration between family members, exchange of information etc. were recorded. If the behaviours in this set were observed, it was considered that processes of learning among family members were taking place. This was established because as previously pointed, the family activities that are more effective in promoting
learning are those that facilitate social interaction and collaboration (Dierking et al. 2001, p.40). The second group ‘Learning and teaching behaviours’ corresponds to the 5 performance indicators (those behaviours that distinguished between learning levels) of the PISEC family learning project. In this group teaching behaviours were added following Diamond (1986, pp.148-9) who observed the teaching behaviours of ‘to tell’ and ‘to show’ quite frequently among family groups and claimed that these teaching behaviours influenced on the time spent on an exhibit and therefore are indicators of learning. Again if behaviours within the second group were observed, it was considered that learning in the family was taking place.

The last group refers to the emotional experience of families when participating in the exhibit such as fun, excitement, mystery and joy. These behaviours, according to Dierking et al. (2001, p.41) are fundamental constituencies of learning and should be used in programmes and activities, especially in family activities where such emotions more easily unfold. In this group, the fact of doing something that personally interests the individual was also added. This implied that the activity facilitated choice within a whole range of possibilities and is in accordance with what Kropf and Wolins (1989, p.80) noted when said that the learner will select those activities, materials or objects that arouse his or her curiosity, and this motivation will bring the learner to further explore. If behaviours classified in the third group within the family learning template were observed, it was considered that the environment in the activity was welcoming by offering different activities to engage in and that the participants through showing excitement and fun were ready to acquire further knowledge.

In the template, a further column was added in order to record whether any of these behaviours were encouraged by the educators or by the activity’s characteristics. This permitted to record from first-hand observations whether the activity is designed to encourage family learning behaviour and facilitated the examination of the activities’ characteristics.
Table 2. Family learning template for assessing the participants’ learning behaviour in the handling family activities at the Horniman Museum.

<table>
<thead>
<tr>
<th>FAMILY BEHAVIOURS THAT IMPLY LEARNING</th>
<th>Does it take place?</th>
<th>Is it encouraged?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Interaction and collaborative learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation of an object or a phenomenon together</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration between family members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange of information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recall of previous experiences together</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Learning and Teaching Behaviours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask and answer each other questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Read (aloud or silently)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hands-on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comment on the objects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching behaviours such as telling and showing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Emotions and Personal Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun, excitement, mystery, joy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Choice and diversity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2 The Horniman Museum and the families’ activities

The Horniman Museum is situated in Forest Hill, south London. The museum was founded by Victorian tea trader Frederick John Horniman, who began collecting specimens and artefacts from around the World in the 1860’s. The Horniman opened in 1901 and holds in total some 350,000 objects, divided in 3 main collections: Natural History with 250,000 specimens; World Culture (Anthropology) comprising 80,000 and Musical Instruments with over 8,500 instruments. There is also a parallel Education Handling Collection which has over 3,700 objects drawn from all three main disciplines. The handling collection provides the visitor with the opportunity to touch objects and specimens similar to those that are exhibited in the museum’s galleries containing puppets, masks, dolls, games, musical instruments and clothes from different parts of the world⁶.

According to the museum visitor survey (Maher, 2007) undertook in April 2006 - March 2007, the core Horniman audience is families with children (68% of visits). The Horniman has therefore a wide provision of activities ranging from guided workshops to art and craft

⁶ Information extracted from the Horniman’s web site (http://www.horniman.ac.uk/)
activities to serve families. The art and craft activities take place in the gallery square and are an opportunity for families to make together finger puppets, kachina dolls, kabuki theatre pictures or glove puppets from India among many other things. The museum education team also provides family story telling, with tales from the galleries and various discovery trails. However, this piece of work is concerned with those family activities that facilitate handling objects; the Hands-on and Discovery Boxes activities. They are facilitated by the museum’s educators and take place in the Hands-on Base room (see Figure 3) where the handling collection is displayed and stored. In this room the collections are displayed side by side, thematically juxtaposed and sometimes randomly mixed. This approach is to stimulate visitors to make their own interpretations and connections between the objects (Roberts C., 2007, p. 6). Moreover, the Hands-on Base aims at providing a toolkit and a vocabulary for how to ‘discover’ objects throughout the Museum (Ibid.). Mainly two kinds of activities for families take place in this room.

Figure 3. The Hands-on Base room at the Horniman Museum. (Author, November 22, 2007)
5.2.1 The Hands-on activities

5.2.1.1 Activities’ characteristics

The Hands-on activities are facilitated by one of the educators and take place every weekend (at least 6 sessions) and during the half term holidays. The activities are organised by themes which include masks, musical instruments, puppets, chopsticks, animals, toys, Africa and music from India. They follow a consistent 2 parts format: an introductory talk is given in which the facilitator explains the topic and children help demonstrate what is being explained (i.e. acting as puppeteers or playing an instrument) and a second part where adults and children are encouraged to explore together the objects that have been presented in the introduction. The first part lasts around 30 minutes thereafter parents and children can explore the objects for 15 minutes. The children sit on the floor while adults sit on chairs behind the children (see Figure 4) and only stand when they are asked to explore the objects on the tables by the end of the session. Notes in the family learning template of families’ behaviours and conversations were taken during three of the Hands-on activities (Hands-on Puppets, Hands-on Music from India and Hands-on Africa). The notes are presented in Appendix 6 and analysed below.

Figure 4. Hands-on Musical Instruments (Rosie Fuller, February 24, 2007).
5.2.1.2 Social interaction and collaborative learning

The observations taken in the family learning template show that social interaction and collaborative learning took place during the three sessions, however, these behaviours were observed in a less degree during the first part (the introduction) of the Hands-on Africa and Hands-on Puppets activities in which adults and children were physically separated and in the whole of the Hands-on Music from India which, as will be pointed out, followed a different structure. In the Hands-on Puppets and Hands-on Africa, while the facilitator was showing the objects and explaining where they are from or how they are used, she passed them around and thus children and adults had the chance to closely look at them, interacting with each other only occasionally. Also, in both sessions the participants were encouraged to have a closer look at the objects together in the last part of the workshops. That is, in the Puppets activity the educator asked the audience to act as puppeteers and in the Africa activity the groups ended up playing African instruments together and getting dressed with African clothes. However, in the Music from India activity parents and children did not get to observe objects together but rather looked at them individually. This meant that exchange of information and recall of previous experiences were more often observed in the Puppets and Africa activities.

Families collaborated when trying to bring the puppets to life because some of them needed more than a pair of hands to be manipulated and they exchanged information such as which string to pull to make the puppet walk while observing themselves on a mirror (Adult: *If we pull this string the elephant foot moves*) or specific information regarding a puppet (Adult: *this puppet comes from India because she is wearing typical Indian clothes and jewellery*). In the Hands-on Africa families played instruments together and helped each other getting dressed with African clothes. They also exchanged information when the educator passed some clothes around, such as the material and the feel of them (Child: *mum, this is very soft!*), however this was observed in those groups that remained together (i.e. a child did not sit on the floor but stayed on the adult’s lap). In both sessions, families recall previous experiences together. In the Hands-on Africa for instance a child recall an instrument he and his dad used to play together when showed a string instrument and another one explained that when they (the family) go to the supermarket they use the supermarket bags instead of bowls on their heads. Also, in the puppets activity a child
exclaimed: *Mum, we know Punch and Judy; we saw them in Brighton!* Because behaviours within the social interaction and collaborative learning group were present, it appears that families in the Hand-son Puppets and Africa activities were engaging in learning processes.

On the other hand, in the Music from India workshop, children helped the facilitator playing the instruments when she was demonstrating and parents’ involvement was not encouraged. At the end of the session there was a joint performance; children played the instruments while parents clapped. Some children couldn’t manage to properly handle the instrument and it was then when parents helped them out demonstrating how to better hold it. Neither exchange of information nor recall of previous experiences together was observed. Social interaction and collaborative behaviour in the Hands-on Music from India was less prominent probably due to the fact that it is a new session developed for the new exhibition and educators were still not familiar or had not yet experienced what works better with the given Indian musical instruments objects. The majority of them had proven to be very delicate and may not have been possible to leave parents and children alone to explore the instruments together and thus the activity followed a different format than the Puppets and Africa’s activities. The Hands-on Music from India is not structured in two parts but rather in one long part in which the educator showed the instruments and told information about India and a short joint performance by the end of the activity. The activity’s format did not allow children and adults to socially interact, and did no therefore encourage learning processes among the family.

### 5.2.1.3 Learning and Teaching Behaviours

When analysing the group of learning and teaching behaviours in the family learning template, it appears that in the Hands-on Music from India learning and teaching behaviours were seldom observed while in the other two activities they were often present. For example, in the Hands-on Africa activity adults asked children: *How does it feel? What do you think this is?* and adopted telling behaviours (*Adult: look at this carefully and think where fruits come from, child: ah yes! This is the bit which is attached to the tree*). In the Hands-on Puppets most of the teaching behaviour referred to how to manipulate the puppets, to which kind of puppets they were manipulating and to where the puppets came
from (Child: *daddy, I want to get the finger puppet, the one I just need to put the finger in!*).

In both activities thus, learning among family members was taking place.

In none of the three sessions there was material available to be read, and therefore the reading behaviour was not considered. Although families could handle objects in the three activities the hands-on behaviour was more often present in the Puppets and Africa activities for the reasons previously exposed.

**5.2.1.4 Emotions and personal choice**

Regarding emotions, in the Hands-on Puppets activity both adults and children seemed to be enjoying very much and also having fun acting as puppeteers and children exclaimed things like: *Look how I do it!* In the Hands-on Africa children had a very good time wearing the African clothes (Child: *I’d like to get dressed like this at home. Can I?* Adult: *will do it with the old clothes that I keep in the kitchen’s cupboard*).

In the Puppets activity children chose which puppet they like the most and had the chance to handle it. This was encouraged by the facilitator who asked different times: *Which one is your favourite puppet?* In the Hands-On Africa children chose which clothes they wanted to try on and which instruments they wanted to play. There was no element of choice in the Hands-on Music from India. Therefore, families felt more welcome, by choosing to do what interest most to them, and seemed to be having a better time in the Africa and Puppets activities. And thus, families were more prepared to further their knowledge in them.

**5.2.1.5 Seven characteristics that facilitate family learning**

If the Hands-on sessions’ characteristics are contrasted with the 7 characteristics (see Table 1) that according to the PISEC researchers (Borun et al. 1998, p.23) successfully facilitate family learning, the results show that such activities have the potential for fully facilitating learning within a family group but that more could be done to better enhance intergenerational learning. That is, the Hands-on sessions are multi-sided; families can cluster around the objects in the end of the session, are somehow multi-user; several sets of hands can manipulate certain objects and are accessible; adults and children use the
objects comfortably. However, they provide cognitive links to visitor’s existing knowledge and experience only to a certain extent. This is due to the fact that from what has been observed it seems that the Hands-on sessions are child-orientated and therefore are more relevant to the children than to the adults. This is confirmed by the kind of suggestions made by Fuller (2007, p.1) for this particular session. She suggests to invite the children to try (the mask) on and make peacock noises, to get the children closer so they can see, to get older children explain how (the resonator) magnifies the sound, to ask the children to guess what is inside (the sitar case) or to ask children for suggestions to make the (the jingles’) sound louder and quieter.

Moreover, the sessions are definitely not multi-outcome since they do not foster group discussion. In them, there is no real discussion of any topic but rather an exchange of information and collaboration between family members in doing something (i.e. playing and instrument or manipulating a puppet). These sessions are not multi-modal either since they are not designed to apply to different knowledge levels but rather to the children’s. This implies that parents are not being cognitively stimulated.

It was also observed that when possible the educators made connections with the objects showed and the ones displayed in the galleries at the Horniman Museum. In the Hands-on Africa activity the facilitator showed a Nigerian mask made out of a piece of cloth and asked children and adults to look for the Nigerian mask which is exhibited in the African gallery. Similarly, in the Hands-on Music from India the educator showed a sitar and told the audience to go and have a look at the sitars exhibited in the new exhibition, Utsavam: Music from India. However, no material was given to the families that could encourage them in the far future to for example make a puppet themselves or to go to a concert of African drums. That is, no activity was suggested that could lead to a further reinforcement of the ideas, concepts or experience learnt during the activity. This was left to the adult’s own initiative or to the children’s curiosity.
5.2.2 The Discovery Boxes activities

5.2.2.1 Activities’ characteristics

The Discovery Boxes activities unlike the Hands-on are self led and are programmed twice a month during the term and increase during the school holidays. The families are introduced to the Hands-on Room and are told how to use the boxes and to be careful handling the objects in them. The boxes are made with objects from the handling collection organised in themes including teeth, adornments, trade, red, shells, the life of a gourd, rod puppets from Java and Mexican masks among many others and are situated in the low level of the display shelves to be easily reached by adults and children. The boxes contain not only objects but also a folder with activities, books and further information. In these sessions 3 educators are at hand. They engage in the discovery process of some family groups, posing questions and getting objects from the display cases. In this case families use the whole room; not only exploring the objects contained in the boxes but also exploring the masks and puppets on the shelves (See Figure 5). Notes in the family learning template of families’ behaviours and conversations were taken during one of the Discovery Boxes activities. The notes are presented in Appendix 7 and analysed below.

Figure 5. Masks and Discovery Boxes on lower shelves (Author, March 27, 2008).
5.2.2.2 Social interaction and collaborative learning

The Discovery Boxes activities are designed to leave children and adults alone. This fact encourages them to understand together what the box is about, which kind of objects the box contains, where the objects come from and so on. Social interaction and collaborative learning were observed when adults and children hold the objects together, described them to each other and asked questions about them. Also when trying on masks and clothes. For example, a mother was helping her child getting dressed with a piece of cloth when the educator pointed that the dress came from Latin America. Then the mother exclaimed: *It looks from Central Asia to me!*

There were also instances in which the adult investigated an object on his or her own and after explained the information gained through touching the object. i.e. an adult spent some time exploring an animal skull and after approached his child to explain what he had found out (Adult: *Look here is where you find the teeth. And look at the kind of jaw, it’s huge!*). Nonetheless, except few exceptions, groups stayed together through the whole session.

Families, as in the Hands-on Puppets and Hands-on Africa activities, also recalled previous experiences together. For instance, a family group was really engaged at looking at the fossils and shells from a box, trying to understand which kind of fossils they were and which materials the other objects in the box were made of. The child suddenly recalled the fact that once when hiking with his parents found what he believed was a fossil. The mother was not sure that what the child had found was really a fossil and they took it to the curator at the Natural History Museum. When approached the child commented that when grown up he wants to be a palaeontologist.

As in the Hands-on Puppets and Hands-on Africa activities, during the Discovery Boxes, through social interaction and collaboration, learning among the family members took place. However, because the family group remained together throughout all the activity, these behaviours were more frequent, and thus its structure proofed to be more suitable for learning to emerge among family members.
5.2.2.3 Learning and teaching behaviours

Families asked and answered each other questions when exploring the boxes especially questions related to the objects’ characteristics (feeling, weight and provenance). For instance a child asked: Where does this come from (pointing at a piece of cloth)? It looks like what grandma has on the small table. And the adult replied: grandma got it from the market. Mmm… it looks like Indian to me but we better ask someone.

Unlike the Hands-on sessions, families spent a good time touching an object of their interest. For example, one of the family groups explored the stuffed crocodile, touching all the parts and investigating where the animal comes from, its age, etc for over 20 minutes.

Parents acted as demonstrators of how things may work and also as learner’s facilitators posing questions to the children and commenting on the object’s characteristics. For example, a mother and a child were looking at a dresses and the mother exclaimed: would you like to put it on? It looks beautiful. I think it’s been made of silk. As in the Hands-on Puppets and Hands-on Africa activities, learning and teaching behaviours were observed, however these were again shown in a higher degree because children and adults spent more time together engaging with the objects.

5.2.2.4 Emotions and personal choice

The activity itself generated a lot of excitement because of the many things to explore in the room and because of opening boxes containing unknown objects. For instance an adult wondered: what should we do first? And the child answered: Mum, this box, it seems special! There was also a lot of excitement when families were trying on clothes and masks from different countries. Families were having fun and thus were ready to gain further knowledge.

Families engaged in exploring the objects within the boxes, displayed in the easy-to open cases and also with the clothes, masks and puppets on the shelves. Thus, children and adults had the opportunity to explore those objects that most interested them and therefore both felt welcomed in the room and ready for furthering knowledge.
Table 3 shows the results of the observations from the 4 activities within the family learning template. It is evident that families engaged in learning behaviours more often and felt more ready to furthering knowledge in the Discovery Boxes activities. On the other hand, the Hands-on activities were also successful in promoting learning behaviours among the family members but allocated less time for children and adults to observe and explore the objects together, lessening the chances to collaborate, exchange information and recall previous experiences. The data shows that it is important to allocate time to allow the family group to socially interact and to collaborate for these learning behaviours to be present.

Families showed similar behaviours in both the Hands-on Puppets and the Hands-on Africa and thus are presented together in the table. In the Hands-on Music from India, learning behaviours among family members were only observed occasionally or never observed. This was due, as previously pointed, to the format of the activity which allocated no time for families to handle the objects together. Following the template, learning and teaching behaviours were observed on a higher degree in the Discovery Boxes again because families had more time to ask and answer questions to each other, to comment on the objects and to handle the objects.

Finally, families showed having fun in both kind of activities, however they showed more excitement in the Discovery Boxes because of the fact of opening the boxes without knowing what they were going to find in them and because of the many things they could handle. Also, if children or adults spotted an object in one of the glass cases that arouse their curiosity, an educator opened the case for them to explore it. And thus for these reasons, families had more options to chose what most interested to them in the Discovery Boxes than in the Hands-on activities.
Table 3. Hands-on Puppets, Hands-on Africa, Hands-on Music from India and Discovery Boxes family learning templates compared. (Y=observed all the time, N=not observed, X=observed occasionally, N/A= not applicable)

<table>
<thead>
<tr>
<th></th>
<th>Hands-on Puppets and Africa</th>
<th>Hands-on Music from India</th>
<th>Discovery Boxes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Social Interaction and collaborative learning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation of an object together</td>
<td>X</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Collaboration between family members</td>
<td>X</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Exchange of information</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Recall of previous experience together</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td><strong>2. Learning and Teaching Behaviours</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask and answer each other questions</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Read (aloud or silently)</td>
<td>N/A</td>
<td>N/A</td>
<td>Y</td>
</tr>
<tr>
<td>Hands-on</td>
<td>X</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Comment on the objects</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Teaching behaviours such as telling and showing</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td><strong>3. Emotions and Personal Choice</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun, excitement, mystery, joy</td>
<td>Y</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Personal Choice and diversity</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

5.2.2.5. Seven characteristics that facilitate family learning

When the Discovery Boxes characteristics are contrasted to the 7 characteristics that best facilitate family learning (Borun et al. 1998, p.23), they appear to better promote learning behaviours among family members than the Hands-on activities (see Table 4, p. 44). That is, the Discovery Boxes activities are definitely multi-sided; families can cluster around the boxes or around the objects that they are exploring and are multi-user; several sets of
hands can handle different objects in the same box. The boxes and objects in the Hands-on Base room are also accessible; both children and adult use the boxes and handle the objects comfortably. But most important, the activity is multi-modal, it appeals to different learning styles; families, through involvement with the boxes can feel, smell, and look at objects. They can also play since few activities are provided in the folders within the boxes. They can interact socially with their family members or with other visitors. They can read the books and extra information also provided in the boxes. Furthermore, the activity appeals to different levels of knowledge. Unlike the Hands-on activities, the boxes used in the Discovery activities were designed taking into consideration both the child’s learning level but also the adult’s. For instance, the boxes containing masks (i.e. Chinese masks, Mexican masks and Indonesian masks) were developed to provide information at different levels as shown below:

**Mask Information (Adult level)**

A mask on display has no wearer or costume to give it movement and no social or religious context to give meaning. Masks are not intended to be viewed as works of art but are made for particular functions. The main functions of masks are: protection, ceremony, disguise, dance, acting, fun, festival, Egyptian mummy mask.

**Masks Information (Child level)**

Change your face: Wearing a mask is a way of getting another face. A mask is made to be worn with a costume and for a particular function/purpose/reason.

You can use a mask:
- In acting – in Japanese theatres
- In ceremonies – like ..?
- To protect your face
- For fun – on bonfire night
- In festivals – like Carnival
- To disguise yourself – when hunting?

(Education, 2001, pp.1-2)
Providing these different levels of information the activity becomes relevant for both adults and children and therefore acknowledges the adult’s role as an active learner in the activity as well. Moreover, the text, in the box activities folder is clearly arranged in different segments; the first pages of the folders list activities that participants can engage in pointing for which age levels the activity has been designed for. The Discovery Boxes sessions are also multi-outcome; the observation and interaction with the different objects in one box foster group discussion. That is, when family groups are confronted with a box they do not only handle the objects but wonder why they have been put together and what are the similarities and differences between the objects. And finally, unlike the Hands-on activities, they provide activity sheets to be taken not only around the galleries but also at home. These are provided in the form of photocopies in the end section of the folders.

Table 4. Comparison of enabling factors provided in the Hands-on and in the Discovery Boxes activities (Y=provided, N=not provided, X=provided to a certain extent, N/A= not applicable)

<table>
<thead>
<tr>
<th></th>
<th>Hands-on Activities</th>
<th>Discovery Boxes Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-sided</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Multi-user</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Accessible</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Multi-outcome</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Multi-modal</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Readable</td>
<td>N/A</td>
<td>Y</td>
</tr>
<tr>
<td>Relevant</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Reinforcement of ideas</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>
6. The Horniman’s support of family learning

After analysing the behaviours families engaged in the handling sessions and the activities characteristics, and in order to evaluate the Horniman’s policies and staff support of family learning, this section deals with the data retrieved from analysing internal documents, interviewing the Community Education Manager, Georgina Pope, and exchanging conversations and emails with the educators that facilitate these activities.

6.1 Documents

The Learning Policy (Education Dept., 2007) at the Horniman Museum highlights the central role of education in the organisation, defines learning following the Campaign for Learning and the Museums, Libraries and Archives Council’s learning definition, and makes a statement of the museum’s learning mission: ‘We aim to establish connections between all our audiences and collections in the museum, gardens and aquarium, thereby enabling visitors to create their own frameworks for learning’ (Ibid., p.1). From the Policy, it appears that the Horniman Trust is committed to serve different audiences (actual and potential) but does not reflect on what these audiences are or on how different education provision will serve the different audiences’ learning needs. The policy acknowledges that individuals visit the museum when pointing that programmes will recognise that people learn in different ways and that learning will be built onto the framework of visitor’s existing knowledge but omits that also groups, i.e. family groups, visit the museum and that these need different learning opportunities.

According to Hooper-Greenhill (1991, p.79) it has become necessary for museums to establish their educational functions and ambitions and to set out, in policy documents, the educational principles in which activities and programmes are based upon. It thus appears that the consideration of a wide range of educational strategies for various visiting groups or the educational principles on which to base the family activities at the Horniman have not yet been summarised in a written policy. When interviewed on 15 April 2008 and questioned about the fact that the Learning Policy does not mention families, Pope (pers. comm.) stated that the Learning Policy is being re-drafted for 2008 but that it still will not mention families in particular; instead this renewed policy will consist of a general statement of the Horniman Museum’s learning ethos and will apply to all audiences. Pope
Ibid.) also pointed that the detail on how different audiences are served can be found in
the Section Work Plan and that a new document, a Learning Strategy, is now being
produced in which there will be references on how family services are developed.

In the Section Work Plan (Education Dept., 2007 p.1) reference to the family audience is
made when describing the function of the Education Section; ‘it is responsible for devising
and delivering different styles of educational sessions to interpret the collections to all the
different types of museum users and non–users, in our community and society at large
(i.e. from families, through adult learners to refugee groups)’ and when pointing the 2
strands the department is comprised of: schools education and community education. The
latter is committed to different groups including adults, children out of school and families
and supports their learning needs and expectations through recurring daily, weekly and
holiday sessions based on the collection and gardens (Ibid.). In this same document, the
Education Section’s objectives set for the period 2007/2008 include developing learning
resources for the temporary and permanent exhibitions in which regarding families they set
out to have a family and under 5s trail for the Music from India Exhibition. And a further
objective set in the document, refers to the fact that the Hands-on Base room has been
redeveloped in the last year and therefore the Section set ‘to explore continued funding
possibilities and staffing strategies for the completion of the Hands-On Base, finishing all
of its core intellectual and physical infrastructure to enable increased access for
community groups, families, schools and general visitors’ (Ibid. pp.2-3).

From the analysed documents, it appears that there is not a clear definition of families,
families’ needs, expectations and learning behaviours or how programmes are developed
to provide activities that best support families. Written documents and a wide
understanding of how families learn would facilitate providing family activities and
programmes that naturally encourage learning behaviours within the family group. Only in
the ‘Outline Brief for the Hands-on Gallery’ (Hyams, 2003, p.1) one of the learning
behavioural characteristics of family groups is recognised; the fact that parents and carers
support their child’s learning in the activities. But there is no mention of how the facilitation
of adult’s support of their children’s learning will be provided through activities or exhibits.
It is therefore reasonable to conclude that it is natural that the Education Department is
now in the process of writing a Learning Strategy in which, the development of family learning provision will be included (Pope, pers. comm., 15 April 2008).

The last point in this section refers to the handling activities that have previously been analysed. It appears that specific learning objectives for each of the activities are not in place. Written documents go back to year 2001 when the first drafts for the new Hands-on Room were being considered. For instance, there are a set of learning objectives which were appointed to the Discovery Boxes containing masks and make reference to acquiring learning about the different masks around the world and the variety of roles masks play in different societies (Education, 2001, p.1). As such boxes are used for formal (schools visits) and informal (families and other community groups) education, it might be that establishing objectives set for encouraging for instance social interaction when these are being provided to families, would help facilitating more meaningful family activities. It might then not be enough to provide different kind of learning levels. Furthermore, in the case of the Hands-on activities, it appears that these have been adapted from school sessions. Clare Driver (pers. comm., 9 March 2008) pointed that the Hands-on Africa activity has been adapted from a school’s session because the structure worked very well and another educator (anonymous, pers. comm., 21 February 2008) when asked about the differences between providing handling activities for schools and providing handling activities for families pointed that the Hands-on Puppets activity is the same but when delivered to schools the educator focuses more on the objectives for each key stages (stages that refer to the National Curriculum established by the government in the UK).

When Clare Driver was asked about the learning objectives of the Hands-on activities, she mentioned having them in mind and always adapting them to the group (pers. comm., 22 December 2007). Equally, Pope (pers. comm., 15 April 2008) claimed that creating learning objectives for all the Discovery for All sessions would lead to a re-thinking of how these sessions operate since she believes that the format does not work as well as it could.

Moreover, Pope (Ibid.) claimed that these sessions seek to encourage involvement from adults and children together and that encouraging further learning is one of the objectives set in the Learning Policy. However, she (Ibid.) acknowledged the fact that the education team still needs to further evaluate the forms this may take place with the family
audiences. This statement confirms that the provision at the Horniman Museum for families in the form of handling activities and the potential learning of them is something that may need more attention.

6.2 Educators

A revision of existing learning objectives or the setting of new objectives might facilitate not only the processes of learning within the family group but also the educator’s role. According to the document ‘Using the Handling Collection’ (Roberts, 2007, p.6) educators ‘create the vital link in harnessing the power and potential of the objects and associated resources to meet the learning objectives of their participants’. Thus, educators play a very important role in providing learning in the handling activities they facilitate; however, it appears that there is no written information available of what these learning objectives targeted for the family audience might be.

Educators are expected to facilitate involvement from adults and children. This is reflected in the ‘Procedures for Explainers’ (Hyam, 2005, p.2) in which educators are advised when delivering the activities to emphasise in the introduction that the handling activity is a learning together exercise and that adults should not just sit back and leave their children to do it. This was also highlighted by one of the educators (anonymous, pers. comm., 21 February 2008) when pointed that a bad session is when parents are not engaging at all with the children activity and the educators act as babysitters making sure that nothing gets broken or lost and by Clare Driver (pers. comm., 21 April 2008) who pointed that one of the greatest challenges of the educators is when adults don’t really want to engage in the session, seeing it perhaps more for children than for families together.

Educators (Cort, Driver and Fuller) when asked about their experience facilitating family handling activities, declared that the most relevant characteristic of them is that ideally, families participate in the session to share experiences. For instance Rosie Fuller (pers. comm., 11 April 2008) pointed that ‘there is a lot of sharing that goes on in the sessions, particularly in the discovery [boxes]…/… lots of sharing of ideas, of stories, of experiences’. Clare Driver (pers. comm., 21 April) put it as a ‘sharing of knowledge and experience (i.e. familiar objects, trips abroad)’ and Julia Cort (pers. comm., 11 April 2008)
as encouraging ‘the families to look at the boxes together, only intervening when they don’t seem to communicate well’.

They also indicated that, in order to communicate all this sharing, families must feel comfortable, welcome and uninhibited. Fuller (pers. comm., 11 April 2008) mentioned that she tries ‘to keep the sessions relevant to the people, informal and fun so they don’t feel inhibited’, Driver (pers. comm., 21 April 2008) sees it as creating the right atmosphere in where both adults and children can find out in the same way and adults do not feel intimidated and Cort (pers. comm., 11 April 2008) creates this welcoming atmosphere by asking questions such as ‘What does this remind you of?’ or ‘How does this smell?’ because ‘they can get the whole family involved and excited’. Pope (pers. comm., 15 April 2008) when asked about the meaning of family learning also pointed the fact of providing ‘activities for families to participate in together, to be fun and enjoyable and to encourage families to feel welcome in cultural institutions’.

From the data analysed it appears that educators at the Horniman are very well experienced at encouraging jointed participation, learning together and sharing of experiences and that they clear see how family learning can be better encouraged and facilitated in handling sessions. They definitely provide and inhibited atmosphere, encourage social interaction and promote learning together.

7. The UCL Museums and Collections: a different approach to family learning

As pointed in the methodology section of this piece of work, a request sent to the GEM group (Group for Education in Museums) mailing list provided with the data to conclude that it is not common practice to develop family activities involving handling of objects in which both adults and children are considered active learners within a family group.

However, the education department at the UCL (University College London) Museums and Collections has been carrying out outreach activities for families in schools that not only consider both adults and children as learners but also facilitate adults with an understanding of how to support their children’s learning.
In personal communication the Head of Learning and Access at UCL Museums, Celine West (21 February 2008) mentioned that these kind of activities have a 2 parts format in which first the adults participate in the handling session for an hour where the leading tutor highlights specific curriculum topics and communication skills. During the second part of the session the children are brought in and either the adult leads the handling activity or both children and adults engage in a related activity to do together. These activities differ from the handling activities at the Horniman Museum not only in the format, the outreach character and the setting but also in the fact that they involve the participation of a family learning tutor whose input helped defining the learning outcomes for the activity (West, pers. comm., 11 March 2008). The learning objectives include supporting parents’ communication with children to enhance the children’s learning, providing a wider understanding of children’s education and supplying with activities they can do with the children on their spare time (Ibid.). Thus, such activities by providing a first part in which only adults are involved, allows them to further their learning about a particular topic and to learn how this can be better communicated (i.e. by asking particular questions) to their children. This means that on a further stage, through teaching behaviours and social interaction, processes of learning within the family group will be in place.

This example of family learning at UCL Museums and Collections has been described for mainly two reasons; the first is that it was the only example of family learning activity provided through the request sent to the GEM mailing in which learning outcomes were specified and the second is to highlight the fact that family learning activities can be developed with various formats and different approaches but when developed should make evident that they have been projected having present how theory says families learn best.
8. Conclusions

The main conclusions achieved related to the research objectives are:

1. **The socially-situated learning theory fits more naturally in the family learning experience in a museum setting than a constructivist theory.**

Families' learning behaviours in museums differ from other museum audience's behaviour in mainly two aspects. Firstly, the family mutually constructs meaning and understanding from an exhibit. Secondly, the information acquired by an individual within the family may be exchanged with the family members in future experiences. Because of these particularities in the learning processes of a family group, the socially-situated or collaborative theory has been presented. This theory emphasises the fact that the learning experience of a family in a museum, and potentially in other informal learning settings, is a social experience and highlights the group’s learning processes instead of focusing on the individual’s learning experience. Taking the socially-situated theory or collaborative learning approach, a family contextual model (see Figure 2) has also been presented. Following the model, individual group members visit the museum in the social context of the family, bringing individual personal contexts (the children’s and the adult’s personal contexts intertwined) and engage in hands-on activities within the physical context of the museum. This model recognises that the learning experience within a family group is a lengthy process, acknowledging that learning occurs with time and that enabling contexts (future family experiences) will contribute to the reinforcement of previous knowledge, and thus learning eventually will take place.

2. **Previous observational studies have provided evidence of family learning in museums highlighting the most common behaviours families engage in.**

Adults and children exchange information, discuss the present experience from previous experiences, facilitate each other’s learning (although adults may facilitate more the children's learning than children may facilitate the adult’s), ask and answer each other questions, engage in hands-on activities and collaborate to understand a phenomenon together. Thus, families act as social units and engage in quite predictable behaviours in a museum setting.
3. Considering the behaviours families engage in research has also demonstrated how family learning can be best enhanced.

To provide activities and exhibits that encourage and motivate learning behaviours within a family group, these have to provide space enough for families to cluster around and promote interaction by allowing several sets of hands interacting with the phenomenon or objects being communicated. Above all, they should acknowledge that children and adults are both learners in a museum setting. Families are integrated of different individuals that have different knowledge and attentional levels and thus have different learning needs and expectations. Therefore, exhibits and activities for families have to not only facilitate interaction among family members but also should be accessible for both learners, should be used comfortably, should appeal to different levels of knowledge and to different learning styles, should provide links to the individual’s previous experience and opportunities to further reinforce the knowledge acquired.

4. Handling activities contribute to family learning by encouraging social interaction, by fostering teaching and learning behaviours and by providing different activities to engage in and diverse objects to handle.

Handling activities contribute to family learning in fostering social interaction. The handling of an object together encourages collaboration between family members, exchange of information and recall of previous experiences together. They also contribute to family learning in fostering learning and teaching behaviours; adults and children ask and answer each other questions, read information, engage in hands-on behaviours and comment on the objects. And finally, they support family learning by providing experiences in which participants get emotionally involved and in which they can choose what most interest them form a wide range of options. Therefore, the handling activities in Discovery rooms can emerge as model facilitators of family learning.

5. It is not common practice to provide family learning outcomes from which to develop family handling activities.

The request sent to the Group for Education in Museums could lead to the conclusion that it is not common practice to develop family activities from having a set of family learning
outcomes and that more research in this area is needed to get a wider perspective of how practitioners develop family handling activities. However, the request provided with an example of family learning with an innovative format and developed from a set of established family learning outcomes. These included supporting parents’ communication with children, providing a wider understanding of children’s education and providing with activities adults can do with the children on their spare time.

5. The observations undertaken of the family handling activities using the family learning template at the Horniman Museum showed that families are learning in the Hands-on Base room but that family learning is better enhanced in the Discovery Boxes activities than in the Hands-on activities.

The observations undertaken of family behaviours taken in the family learning template (see Table 3) while participating in 2 types of handling activities at the Horniman Museum, demonstrated that learning among family members takes place and that thus the handling family activities contribute to family learning. However, since learning behaviours were more prominent during the Discovery Boxes activities than during the Hands-on activities, it appears that in them family learning is better facilitated and provided. This conclusion was confirmed by the data provided when the handling activities were contrasted with the 7 enablers of family learning that the PISEC researchers suggested as essential for family learning to take place (see Table 4).

However, educators that facilitated both kinds of activities fully engaged in fostering and motivating learning together, social interaction and adult’s guidance to support children’s learning and are thus facilitating family learning despite the activities’ characteristics.

6. The analysis of internal documents, the interview to the Community Education Manager and the chats with the educators lead to the conclusion that the Horniman museum is facilitating meaningful family handling activities but that a discussion of how this is provided and which family learning outcomes each activity aims at is needed.

This was confirmed by the fact that a new member of staff will soon join the community education team which main task will be to evaluate the current family provision and to
develop and deliver new programmes for families. It might be then that after a process of evaluation the format of the hands-on activities changes to better foster family learning. This was confirmed by Pope (pers. comm., 15 April 2008) who claimed that setting objectives and evaluating against these [would] provide(s) a route through renewal.

Therefore, after a process of evaluation the Horniman museum would benefit if:

- Written documents reflect the educational principles in which the family activities are built on.
- Learning outcomes are developed for each of the activities offered and for each audience the activity might be targeted at. Thus, the activities should for instance aim at increasing family enjoyment from learning and experiencing together, building confidence within the family group, encouraging adults to participate in other family activities at other venues and encouraging adults to use the information and skills that they have learnt from the activity at home or in other situations with the children.

7. Further research is needed for museum practitioners to provide activities that better foster learning behaviours among family members.

Most of the research that has been carried out to evaluate learning among family members has considered a very short time frame. In the case of Diamond (1986) and the PISEC Project (Borun et al., 1998) families were interviewed immediately after withdrawing from the last exhibition in the museum. The research carried out has thus focused on the immediate experience within the museum and very little research has been done on the learning impact of a museum visit or activity within weeks, months or years. An exception to this is the research conducted by Ellenbogen (2002) who studied a family who were frequent museum visitors at home and in other leisure time activities during a period of 18 months. Thus, research has to look at the potential learning of the museum visit over longer periods (months, including years) of time.
Having pointed this, more research in museum settings is needed for a further understanding in the field of family learning in museums. According to McManus (1994, p. 96), even though zoos and aquaria share some characteristics with museums since they are settings of informal education, museums can provide a whole range of innovative learning activities. There is also a need to further the research into art and anthropology museums in order to explore which learning experiences can provide and are actually providing for family groups.

Research should also incorporate various research methods. According to Dierking (2002, p.15), future family studies should incorporate multiple methodologies; observations, discussions, in-depth interviews and so on. If a collaborative or socially-situated model of learning is accepted, then the methods of the research should focus on analysing the family interactions. The methods implied in the future to research family learning will have to be sensitive to social interactions (Ellenbogen et al. 2004, p. 56), focusing on the ways of describing visitor activity in terms of how visitors use the exhibits or activities, how visitors talk to each other while visiting exhibits or participating in activities, and on the ways that action and talk are related (Crowley and Callanan, 1998, p.14).

This piece of work has shown that further research is also needed in understanding how families learn in museums and in understanding whether museums are developing activities having in mind how theory and practice say families learnt best. Further understanding of family learning would facilitate the development of family activities that better serve this multigenerational audience as a learning unit. It is time for museum practitioners to change their main focus of attention from schools to family groups which are the largest audience in today’s museums. And it is time for researchers to observe families as learning units rather than as a collection of individuals that independently construct meaning.
9. Reference List


**Internal documents**


10. Appendices

Appendix 1: Email interview to Georgina Pope

1. How would you define family learning in a museum setting?

As an opportunity for adults and children to learn together in a friendly, accessible and inspiring environment. To assist parents with ideas they can use at home, so the experience can extend beyond the visit. To stimulate curiosity, to provide activities for families to participate in together, to be fun and enjoyable and to encourage families to feel welcome in cultural institutions.

2. Regarding the activities, how do you think family learning is best enhanced? What about the role of the educators; are they trained to encourage family involvement in the activities?

I believe family learning is best enhanced when participants feels comfortable and welcome, and when everyone is encouraged to join in, children and adults alike. A lot of this is down to the skill of the tutor to create the right pitch for the particular audience and age range, which comes with experience. I think having friendly, approachable and inspiring tutors is crucial to establishing trust between participants and educators, and therefore their willing involvement. The training our educators receive varies in content dependent on where we perceive training gaps or where we receive particular requests from the team, but it generally includes developing the ability to encourage questioning rather than providing answers. Our tutors tend to be confident individuals, practised at encouraging participation and creating a fun environment.

3. You said you and your team are revising and rewriting Learning Objectives of the different activities. Do you think this will bring changes in the way activities for families are facilitated?

I don't think there is any point in this kind of exercise unless you are open to it potentially highlighting areas for change or particular consideration. I am sure that creating learning objectives for our Discovery for All sessions will lead to a re-think of how these operate, for example. Currently I personally have a feeling that the format doesn't work as well as it
could as our visitor numbers increase, but a thorough process of evaluation could highlight
the particulars of why and where this might be. The setting of objectives and evaluating
against these provides a thoughtful route to renewal.

4. The Learning Policy at the Horniman reads ‘we are committed to consultation
with existing and potential audiences in order to develop appropriate and attractive
learning experiences’. Has consultation with families ever taken place? If not, what
are your views on this?

Consultation with families frequently takes place. Apart from regular feedback in the form
of comments books at our sessions, we recently participated in a Renaissance London-
wide evaluation of provision for early years family audiences. I am conscious of the need
to systematise our internal evaluation of the sessions that have been running relatively un-
changed for a while, and we shortly have joining us a new member of the Community
Education team whose brief is to evaluate our current family provision and develop and
deliver new programmes for this audience. Consultation will inform this entire process.
This is a one-year contract in the first instance.

5. The learning policy doesn’t say anything specific about families. Taking into
consideration that families are the core audience at the Horniman (68% visits in
2006-07) and that learning is at the core of the museum, is this something you're
going to be looking at?

The Learning Policy has been re-drafted for 2008 by the Head of Leaning, the Schools
Manager and myself, and is awaiting Trustee approval. However, it will still not mention
families in particular, as we took a decision to change the character of the Learning policy.
This will now be much shorter and more a general statement of our learning ethos and the
principles that inform it, and apply to all audiences. We feel that the detail of how we serve
particular audiences is more appropriately dealt with in our section work plan, which
describes in general terms the aims of each year. We are also in the process of drafting a
third document to describe and direct our work – a Learning Strategy document, which will
deal much more with where we want to be and what we want to do in the slightly longer
term. This will certainly contain reference to our family audience and how we develop our service for them.

6. **Have family activities been evaluated? If yes, what were the results, if not, what are your views on this.**

This is a big question! Yes, various of our family programmes have been evaluated and to lay out the results of all that here would involve employing an extra person to collate all the information. Which can often be the case with evaluation. I.e. don't do it unless you have the manpower and time to process the results and learn from them. I would like our programmes to be evaluated internally in a more consistent fashion, which as I have said previously, we are on the path to achieving. Being relatively new in my job, I am gauging general feelings about our programmes from the people who deliver, the people who observe and from participant feedback. However, I would prefer to start afresh with evaluation and gain an accurate current picture rather than go back through the huge evaluation archive that exists, but which seems to have been used in a limited way in the past. Generally, our family audience seem to be very happy with the service we provide. There is always room for improvement of course and I think our new family post will be best placed to find out what our existing and potential audiences want.

7. **How do you think the handling activities at the Horniman help families learning?**

This can be effective in a variety of ways. Handling and experiencing first hand through touching and using objects is immediate and memorable. It is also possible to make connections with one's own physical experiences, and find common ground between diverse cultures and times. It also recognises that we all learn in different ways and retain information via different means. I feel it removes important barriers to engagement, both in a sensory way (almost everyone has the sense of touch and can respond on a very basic level to texture, weight etc) and in a psychological way – it's a museum and these are museum objects, some of them very old or rare, but everyone is able to touch and have a response inspired by touch and experience. Specifically, they are a brilliant way into learning about other cultures, places and fabulous knowledge about the world and the life that inhabits it. Stories can be illustrated with objects beautifully, and objects can be
brought alive by stories and context. Generally it's just fun and engaging. Watching families dress up in costume or animate masks by wearing them, or investigate a Discovery Box together, can communicate the enjoyment to be had from this contact with objects. It is all essentially a stimulus for ideas, talking together and learning together.

8. The Learning and Skills Council defines Family Programmes as those activities which aim to encourage family members to learn together. They should include opportunities for multigenerational learning and, wherever possible, lead both adults and children to pursue further learning. Ideally, these programmes also enable parents/carers to learn how to support their children’s learning. Is this something that the Education Team takes or will take into consideration?

This is something we very much take into consideration. For example, our family art and craft sessions are specifically designed to be easy to replicate at home, with generally available materials. They also encourage adults and children to work together on the craft activity. Our under 5s storytelling attracts high numbers of repeat visitors, and makes young families feel welcome in the museum context, and presents songs, stories and actions that parents can re-tell at home. All our family activities seek to encourage involvement from adults and children together. Encouraging the pursuit of further learning is one of the objectives we set out in our Learning policy. We have still to thoroughly evaluate the forms this may takes with our family audiences.

9. And, the education team has delivered different outreach session to attract broader audiences in pre-schools, libraries, play clubs and after schools. Do you think in the future you’ll be carrying out parental sessions (as mentioned before to help parents supporting their children's learning) in such venues for them to feel more comfortable and confident when attending to any of the family activities at the Horniman?

We probably wouldn't market it quite in this way, as this might not appeal to the families who currently don’t come to the museum, and most parents do seek out activities for their children rather than for themselves. So even if it is the parents one is trying to reach, it is often more effective to describe any activities as being for their children. Otherwise it can come across as slightly patronising. Our Audience Development Community Education
Officer spends time on outreach with SureStart groups, and as you say, in libraries and engaging with the after-school agenda, to diversify and broaden our family audience and will be continuing this work for as long as the post is funded. We are constantly investigating new ways to encourage these harder-to-reach families to visit the museum and participate in our programmes.

**Appendix 2: Questions sent to the educators at the Horniman Museum**

1. How would you describe Family Learning in a museum setting and how do you think is encouraged at the sessions that you have been delivering at the Horniman (either the Hands-On sessions or the Discovery Boxes sessions)?

2. What do you think children learn and what adults learn from the sessions at the Horniman?

3. How do you think they learn from each other in your sessions?

**Appendix 3: Family learning request sent to the Group for Education in Museums**

To: GEM@jiscmail.ac.uk
Date: 20-feb-2008 21:50
Subject: Family Learning

Good morning GEMERS,

I'm currently researching how handling sessions are used as a strategy for family learning in museums. Therefore I'd be very grateful if you could send to me a description of handling sessions address to families that might be taking place in your organisation and family learning objectives related to these sessions.

I'm happy to collate answers if anyone out there is interested in the topic.

Hope to hear from you.
Appendix 4: Celine West answer to the Group for Education in Museums family learning request

Sent: 21-feb-2008 4:22
Subject: Re: Family Learning

Dear Maria,

We have done quite a lot of outreach in family learning groups in schools in Haringey, where they have many years of experience working with museums. We have done both one-off sessions, talking to family learning tutors first about what they want to achieve, and projects of half a term. The handling sessions usually take the format of object handling with parents for an hour first, highlighting communication skills and a particular topic such as finding out about ourselves with fingerprinting or looking at a curriculum topic such as Ancient Egypt, then bringing the children in, either for parents to lead the handling with their children or for a related activity e.g. art for them to do together. We highlight what it is their children can learn through the activities explicitly as we go through the session such as making new connections, catering for different learning styles, and where we are giving parents a taste of what children are asked to do e.g. in art where parents often feel unconfident about their work we remind them this can be the case for children. We have had family learning groups visit the museums as a follow-up, beforehand we talk through all the social aspects of the visit such as travel and behaviour. Those of us leading the sessions in schools find them very rewarding as we are engaging the parents both as adult individuals and as parents, as well as working with families together.

Best wishes
Celine West
Head of Learning and Access
UCL Museums and Collections
Appendix 5: Questions sent to Celine West

From: Maria Choya
Sent: 11 March 2008 10:12

1. What are the learning outcomes for parents in your family learning sessions? You said in your previous email that you highlight communication skills and a particular topic. Do you have specific learning outcomes that you could forward to me? If not what do you think the adult is learning in this context?

2. From your experience, do you think the children learn differently depending on whether they're accompanied with their peers or with their relatives? Do you take this into consideration when developing the sessions?

3. And finally, do you have an accurate description of any of the activities that you talked about in which the parents take a more important role in leading the session after they've been introduce to the topic, communication skills or different learning styles?
## Session: Hands-on Puppets

**Date and time:** 22nd December 2007, 12pm

After the explanation of different kind of puppets: finger puppets, hand or glove puppets and string puppets with different stories i.e. Mr Punch and Judy. The children helped the educator performing the story with the puppets. The last 15 minutes of the session children and adults collaborate in bringing the puppets to life.

<table>
<thead>
<tr>
<th>Does it take place? Examples</th>
<th>Is it encouraged?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Interaction and collaborative learning</td>
<td></td>
</tr>
<tr>
<td>Observation of an object or a phenomena together</td>
<td></td>
</tr>
<tr>
<td>By the end of the session the educator shows them the string puppets and asks everyone to go and have a closer look and to bring them to life. Is then when the groups explore the string puppets together and some adults in the groups on their own doing as puppeteers while children look at them. Also children: Look how I do it!</td>
<td>Yes. The educator encourages them to have a go while reminds them to be careful.</td>
</tr>
<tr>
<td>Collaboration between family members</td>
<td></td>
</tr>
<tr>
<td>Some string puppets are too big for children to manipulate on their own and adults and children help each other.</td>
<td>YES</td>
</tr>
<tr>
<td>Exchange of information</td>
<td></td>
</tr>
<tr>
<td>Use of the mirror: Adult: if we pull this string the elephant’s feet move. A mother tells her children that this puppet came to the museum from India because of the costumes and jewellery. Child: daddy, I want to get the finger puppet, the one I just need to put the finger in!</td>
<td></td>
</tr>
<tr>
<td>Recall of previous experience together</td>
<td></td>
</tr>
<tr>
<td>Mum, do you remember when we saw Punch and Judy in Brighton?</td>
<td></td>
</tr>
<tr>
<td>Behaviours</td>
<td></td>
</tr>
<tr>
<td>Ask and answer each other questions</td>
<td></td>
</tr>
<tr>
<td>Mum, what does it say here? It says that you had a wonderful time today at the HM.</td>
<td>YES</td>
</tr>
<tr>
<td>Read (aloud or silently)</td>
<td></td>
</tr>
<tr>
<td>NO, no material given to be read</td>
<td></td>
</tr>
<tr>
<td>Hands-on</td>
<td></td>
</tr>
<tr>
<td>When children participated helping the educator with the puppets and in the end of the session.</td>
<td>YES</td>
</tr>
<tr>
<td>Teaching behaviours such as telling, naming, describing, and questioning</td>
<td></td>
</tr>
<tr>
<td>YES. See exchange of information</td>
<td></td>
</tr>
<tr>
<td>Emotions</td>
<td></td>
</tr>
<tr>
<td>Fun, excitement, mystery, joy</td>
<td></td>
</tr>
<tr>
<td>During the last 15 minutes of the session is when children say to the accompanying adults: look look how I do it! And children seemed to be having a very good time acting as puppeteers.</td>
<td>YES</td>
</tr>
<tr>
<td>Personal Choice and diversity</td>
<td></td>
</tr>
<tr>
<td>There is a factor of choice. The individual can choose between a series of activities or objects to do/to engage with.</td>
<td></td>
</tr>
<tr>
<td>Most of the children expressed which puppet was their favourite and chose to handle their favourite one first.</td>
<td>The educator, when interacting with children, asked: what’s your favourite puppet?</td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>Seating</td>
<td></td>
</tr>
<tr>
<td>Children are seating on the floor and adults on the chairs placed behind the children.</td>
<td>The last 15 minutes of the session all the members are acting as puppeteers and nobody is sitting.</td>
</tr>
</tbody>
</table>
Session: **Hands-on Music from India**

Date and time: 17 February 2008, 2 pm

<table>
<thead>
<tr>
<th>Structure/ Description</th>
<th>Does it take place? Examples</th>
<th>Is it encouraged?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1) INTRO:</strong> What the Session is about (addressing to the children)? Music in India. Asks children to spell India and to locate it in the map. Only occasionally addresses to adults (‘we will need some help from the adults’)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2) SHOW AND PLAY INSTRUMENTS:</strong> (pointing to be very careful with the instruments)</td>
<td></td>
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</table>

**Social Interaction and collaborative learning**

<table>
<thead>
<tr>
<th>Observing of an object or a phenomena together</th>
<th>There is no part where adults and children look at the objects together.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Collaboration between family members</th>
<th>NO MUCH BUT… Adults are not handling the instruments. When the educator explains the national bird of India: peacock. Children wear the masks and adults help the children wearing them. And she asks the adult audience, so what animal is the national bird of India? In the end, adults helping children to handle the instruments.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Exchange of information</th>
<th>POOR</th>
</tr>
</thead>
</table>

**Behaviours**

<table>
<thead>
<tr>
<th>Ask and answer each other questions</th>
<th>NO</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Read (aloud or silently)</th>
<th></th>
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</table>

<table>
<thead>
<tr>
<th>Hands-on</th>
<th>In the end of the session every child has the chance to play an instrument. Adults instead only help children playing, clap or some with more initiative play the bells.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Teaching behaviours such as telling, naming, describing, and questioning</th>
<th></th>
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</thead>
</table>

**Emotions**

<table>
<thead>
<tr>
<th>Fun, excitement, mystery, joy</th>
<th></th>
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</table>

**Personal Choice and diversity**

<table>
<thead>
<tr>
<th>There is a factor of choice. The individual can choose between a series of activities or objects to do/to engage with.</th>
<th></th>
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</thead>
</table>
## Session: Hands-on Africa

**Date and time:** 9 March 2008, 1pm.

<table>
<thead>
<tr>
<th>Structure/ Description</th>
<th>Does it take place? Examples</th>
<th>Is it encouraged?</th>
</tr>
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<tbody>
<tr>
<td>Intro of what they will do in the session. Questions like: Have you ever been abroad? Or did these countries resemble to England? The structure of the session was very clear and related to the objects that the educator showed. She asked about daily things such as what did you have for breakfast and what you were wearing when you had breakfast. The last 15 min of the session all of the participants, children and the accompanying adult, explore and handle the objects together. Structure: breakfast, shopping, instruments and masks.</td>
<td>A family looking at the bells and trying to make it sound. Then the educator asks them to show everyone but the child is too shy. The mum first try to encourage the child to make it sound. : Mum: 'hold the metal steady and hit it with the stick'.</td>
<td></td>
</tr>
<tr>
<td>Social Interaction and collaborative learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation of an object or a phenomena together</td>
<td>Educator passes the objects around to children but also to adults.</td>
<td></td>
</tr>
<tr>
<td>Collaboration between family members</td>
<td>In the end: It's time that you have a closer look and adults too if you want to have a look. They play instruments together and help each other getting dressed with the African clothes.</td>
<td>YES</td>
</tr>
<tr>
<td>Exchange of information</td>
<td>The educator passes around different clothes. Adults and children touch them and exchange info like materials and feel. The children that remained sat on their parents lap were exchanging info with them. Child: Mummy, this is very soft!</td>
<td>YES</td>
</tr>
<tr>
<td>Recall of previous experience together</td>
<td>Child: My dad has one of those and we used to play it together, that's why I know what this is and child: when we go to the supermarket we use the supermarket's bags, we don't bring our own bags</td>
<td></td>
</tr>
<tr>
<td><strong>Behaviours</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask and answer each other questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Read (aloud or silently)</td>
<td>Objects are passed around. In the end if the session everybody has a chance to handle the objects that have been shown and to get dressed with the clothes also shown.</td>
<td>YES</td>
</tr>
<tr>
<td>Hands-on</td>
<td>Mum to child: how does it feel? Is it cold? and Mum: look at this, what do you think is it? Look at this carefully and think where fruits come from. Child: ah! Yes! This is the bit which is attached to the tree. Adults telling all the time to the children: manage it gently and let the other children to have a go too. And in the end parents tell their children to say thank you to the educator.</td>
<td>YES</td>
</tr>
<tr>
<td>Teaching behaviours such as telling, naming, describing, and questioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotions</td>
<td>Joy of the girl dressed as a girl in Africa and goes to her mum to share her joy. She tells to mum: I’d like to get dressed like this at home. Can I? Mum: will do it with the old clothes that I keep in the kitchen’s cupboard.</td>
<td>YES</td>
</tr>
<tr>
<td>Personal Choice and diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a factor of choice. The individual can choose between a series of activities or objects to do/to engage with.</td>
<td>In the end of the session there is the option of choosing what to handle.</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>The Nigerian mask which is a cloth and the educator tells them to go and have a look at the big one which is in the gallery. She tells them to remember that only one person wears them.</td>
<td></td>
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</tbody>
</table>
Appendix 7: Notes taken on the family learning template during the Discovery Boxes activity

<table>
<thead>
<tr>
<th>Session: Discovery Boxes Session</th>
<th>Date and time: 21st February 2008, 2pm.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure/ Description</strong></td>
<td>INTRO: Does anybody know what we’re going to do today? Has anybody been here before? My name is …. and this is a very special room, where you can touch museum objects but where you need to be careful. He addresses himself to children. And finally says enjoy yourselves! Children and adults are left alone with the boxes and educators intervene only when they are asked about an object in the box.</td>
</tr>
<tr>
<td><strong>Does it take place? Examples</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Is it encouraged?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Social Interaction and collaborative learning</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Observation of an object or a phenomena together</strong></td>
<td>Mum: dressing up her daughter with a piece of cloth and an educator tells them it comes from Latin America and the mum exclaims: look it is Latin American it looks from central Asia to me! Normally the families explored the boxes together except in one case when two families that they knew each other came together to the session. Then it was these children who explored the boxes together and the adult interfered only to tell them not to run or to let other children with their families to explore the boxes. YES</td>
</tr>
<tr>
<td><strong>Collaboration between family members</strong></td>
<td>Observing the boxes together and understanding what the objects are, what they're made of etc…. Adult: who did these teeth belong to? YES</td>
</tr>
<tr>
<td><strong>Exchange of information</strong></td>
<td>Dad really interested in animal’s skulls and had a good look on his own and after explained everything he discovered to his daughter. Dad: look here is where you find the teeth, and look at the kind of jaw, it's huge! YES</td>
</tr>
<tr>
<td><strong>Recall of previous experience together</strong></td>
<td>A boy and his grandma looking at fossils and other objects and learning together how fossil are called, different types. Really chatting together trying to understand how the bamboo was used. And he tells me the story of finding a fossil once in the mountain and his mum told him that was not a fossil. They took it to the museum and the curator of Natural History told them it was a real fossil. He collects fossils and wants to be a palaeontologist when he grows up.</td>
</tr>
<tr>
<td><strong>Behaviours</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ask and answer each other questions</strong></td>
<td>Child: Where does this come from (pointing at a piece of cloth)? It looks like what grandma has on the table. Adult: grandma got it from the market. Mmm… it looks like Indian to me but we better ask someone…. YES</td>
</tr>
<tr>
<td><strong>Read (aloud or silently)</strong></td>
<td>Some of the family members read the activities suggested in the activities folder. YES</td>
</tr>
<tr>
<td><strong>Hands-on</strong></td>
<td>Saw a mum and a child with the stuffed crocodile touching it and really investigating together the parts of the animal and its feeling. All the session is about handling objects. YES</td>
</tr>
<tr>
<td><strong>Teaching behaviours such as telling, naming, describing, and questioning</strong></td>
<td>Parents acted as motivators and demonstrating how things might work. Also by engaging in the session by asking questions such as how do you think this works, what’s this made of…? Mum and child looking at the dresses. Mum: would you like to put it on? It looks beautiful. I think it’s been made of silk.</td>
</tr>
<tr>
<td><strong>Emotions</strong></td>
<td>A mum and her daughter showed a lot of excitement when trying the clothes on.</td>
</tr>
<tr>
<td><strong>Fun, excitement, mystery, joy</strong></td>
<td>Mum: What should we do first? Child: mummy this box Mum: Let's have a look and see what's in here. YES</td>
</tr>
<tr>
<td><strong>Personal Choice and diversity</strong></td>
<td>Plenty of boxes to choose from. Not only boxes but also the dresses and masks and puppets to play with or discover together. YES</td>
</tr>
</tbody>
</table>