The screen behind the conversation…

On the impact of digital device on children-adults interactions in museum visit

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Abstract:

This research studies the impact of digital device (visioguide) on interaction between children and adults in the context of museum visit. Based on 13 observations and 10 interviews with children and adults, two main results have been identified: first, there is a discrepancy between adults and children expectation regarding interactions during the museum visit when a visioguide is used. Second, the interactional intensity between adults and children varies throughout the visit. Key moments of interaction disruption are identified.

Keywords:museum, children, digital device, interaction

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Introduction

The new generation, called "digital natives" in the Anglo-Saxon world, is made up of teenagers and children whose approach to culture is very different from that of previous generations. Indeed, this age group has access to digital devices earlier thanks to school and the generalization of technology. This phenomenon leads to more specific use and consumption, characterized by a change in the importance given both in practice and symbolically to traditional cultural activities (reading, visiting cultural institutions…) as well as a profound transformation of the cultural perimeter. For a young public cultural consumption is necessarily digital, thus redefining the way institutions are labelledin favour of individuals and networks (October, 2009). In this context, the key players in cultural transmission, that is to say school and parents, are confronted by radical changes which affect the foundations of their actions: the conception of time and space, the link between knowledge and culture, the mediation with young people… Concomitantly with these transformations, cultural institutions are also changing by adopting increasingly innovative digital devices to answer in an intelligent way and to adapt to this new demand (audio-guides, video-guides, museum mobile applications, creation of virtual environments…). However, we must ask how the young target feels about this experience, which has been set up by focusing more closely on adults-child interaction in this new environment. Previous research has already studied the relationship between children and art museums andthedigital learning in this same world. However, little research has concentrated on the subject of how digital devices influence the interaction between children and adults which is the purpose of this research.

In a first part, an overview of the digitalisation of museums and adult-child cultural interaction is presented. The second part focuses on the research methodology that has been implemented. The last part presents and discusses the results of the analysis.

Museums in a digital era

Today, museums are more and more concerned about their audiences (Eidelman*and al.,* 2007; Gilmore and Rentschler, 2002; Mc Lean, 1997). This growing interest can be seen in a certain number of actions, led at different levels and perfectly adapted to the various target groups (school groups, tourists, families…). These approaches (both on and off line) have enabled museums to become much more efficient in conducting their educational and social missions. In this context art museums are not lagging behind in this new strategic orientation (Debenedetti*et al*, 2009). Indeed, one of their main missions is to facilitate access to works of art by focussing not only on increasing the number of visits but also on setting up the conditions required to create an unforgettable experience that will stem from the encounter between the visitor and the cultural object that is exhibited (Bourgeon-Renault, 2009).

Since, over and above the socio-cultural factors, which affect museum visits, there is the all-important question of the museum experience (Falk and Dierking, 1992). Amongst the various groups of museum visitors, children are a primary target within the social and educational mission of an art museum. However, the experience of young audiences in art

museums has only been studied by a limited number of authors. The small amount of research that exists on children and museums pinpoints the case of families learning in the context of the science museum (Piscitelli and Anderson, 2001; Sterryet Beaumont, 2006). On this topic Lagier*and al.* (2005) also underlined the differences in perception and feelings that children have about museums depending on how familiar they are with these museums. At the same time, it has also been shown that the more familiar the child is with a museum, the more his concentration increases (Jensen, 1994). Within this framework, a child's attention can be caught by interactive devices which encourage him to touch, to play with and to react to the works on exhibition which in turn increases his interest and the time he spends at the exhibition (McManus, 1987; GottesdienerandVilatte 2001).

In view of these expectations, museums are constantly making progress in following this young public, so keen on new technology. Audio-guides, video-guides, multi-media kiosks, personal computers, Internet websites, personal digital assistants, software, games, virtual spaces… are just some examples which show the wide range and the variety of devices that have gradually entered museums. Considered to be both fun and educational tools these new digital systems seek to pass on know-how and knowledge adapted to each and every person. These devices appear to open up new opportunities to provide visitors with different kinds of information and ways to learn (Burch and Gammon, 2006). Hawkey (2004) explains that digitalization of museums enables visitors to access a new learning experience, based on unlimited choice as well as the freedom to put together his/her own learning path. Mancini and Carreras (2010) consider that in addition to the change brought about by technology, it is important to notice that visitors' behaviour has also changed. Visitors are no longer just passive information receivers but nowadays they actively look for what they want.

As far as children are concerned, in this context the fun and interactive mode is highly recommended. Children rarely visit an exhibition in the expected classical way (Hein, 1998; Hilke, 1989). Indeed, children like to have fun, to take their time, to dream, to look, to listen, to learn "stuff" in museums without necessarily walking too much…They prefer to stroll, to sit, to make comments on what they can see out loud… For children who are less familiar with museums, museums can even be seen as abstract and immaterial, they don't see any use for them and will only go there when they are older. All of them (whether they are familiar with museums or not) ask for original and sensorial activities, which develop their imagination and their creativity (Lagier*and al.,* 2015). The tricky issue here is to attract their attention without over-involving them, in which case they are likely to lose interest. On this topic, Guichard (1995) recommends that exhibits on the same subject should be grouped together in the same area to avoid dispersion.

In this specific context, a child museum visitor demands both a certain amount of independence and a certain type of guidance. Because he wants to be free yet at the same time he wants to share everything that he feels and perceives. Yet we know that in this context the adult-children relationship is crucial…

Adults-children interactions in museums

Parents are a major socialization actor for children (McNeal, 1992; Brée, 1993; Roedder-John, 1999) and contribute to children learning process through interaction with them. Places are also socialization agents. For instance, museum is a place of artistic education (Hein, 1998; Darras and Kindler, 2002) where children could learn through direct interaction with the work

art and also through social interactions (Guichard, 1995; Jensen, 1998). Family interaction starts before the visit itself and children play an active role in the decision making process for visiting a museum. Indeed, children play four major roles: initiator, information gatherer, evaluator and decision maker (Wu *et al.*, 2010). Inside the museum,Crowley *and al.* (2001) emphasized that children's learning is more effective when interacting with parents than when they are alone or with peer groups. The learning through interaction with adults is related to family configuration (Nadelson, 1991) and also by context or setting. For instance Braswell (2012) underlined that parents-child interaction is longer in an exhibition where children are unfamiliar with artifacts (i.e water exhibit) than for more common ones (i.e grocery exhibit). Children tend to ask more questions about new artifacts than for usual ones.

Conversation between parents and children in museum participate to children's learning (Ornstein *et al.,* 2004).Tenenbaum*et al.,* (2010) showed that the use of booklet of activities by families facilitates interactions between parents and children. For instance, through asking questions suggested by a booklet, parents engaged more in an exhibit and made the discussion with children longer. Moreover, these interactions enhance children's knowledge about history.

However, digital devices maymodify parent-children interaction as children show more interest to interactive devices than on watching art of works contrarily to their parents (Debenedetti*et al.,* 2009). The authors argued that children spent more time and interacted with more digital devices than on watching the art of work. Moreover, while children use interactive devices, little intervention from parents was observed which diminishes their knowledge mediator role (Debenedetti*et al.,* 2009).

Method

The data collection is based on three different sources: 13 observations, 10 individual interviews and a survey of 212 respondents carried out in France from October 2015 to January 2016. The combination of diverse data sources reinforces result triangulation and leads to more specific insights. The respondents were recruited in France, more precisely in Lille Palais des Beaux-arts during the temporary exhibition Joy of Life (*Joie de vivre*). They were selected on the basis of whether or not they were visiting the exhibition with kids and were using a digital device (visioguide). The observations were conducted unobtrusively, namely, pairs adults – kids weren't informed that have been observed. The interviews were conducted by one of the authors and two professional interviewers. Parents and kids from the same pair were interviewed separately. Each interview lasted between 20 and 30 minutes and was audio recorded and transcribed. The interview guide addressed (1) respondents' behavior concerning museums (importance in their life, expertise, practice and expectations regarding exhibitions), (2) their behavior concerning digital devices (the same factors in relation to digital devices and the use of the visioguide during the current exhibition), (3) their interactions during the visit (duration, types of conversations, specific moment during the visit etc.), and (4) their overall evaluation of the experience (satisfaction). The interview guide was adapted to the kid target (same categories but simple vocabulary). The survey has been administered after the visit and face to face.

Findings

The first step was to analyze the descriptive characteristics of the sample. The analysis of the survey shows that 72% of the adults accompanying children are women in activity. Adults hold BAC+3 degree or above. The main motivation to visit the exhibition is to "be with

others" for 44% of them. First time visitors (77%) tend to plan their visit some weeks before (vs. some days). After their visit, 72% are satisfied with the experience and plan to return to the museum.

The second step was to quantify the discourse content (number of words, occurrences, lemmatization and word associations) using Alceste software. This gave us 7,895 words for kids discourse and 11, 846 words for adults discourse (having removed auxiliary words and interviewers' discourse/speech). Alceste analysis shows respectively three classes for adults discourse (representing 82% of textuals units) and five classes for kids discourse (42% of textual units) (figure 1).
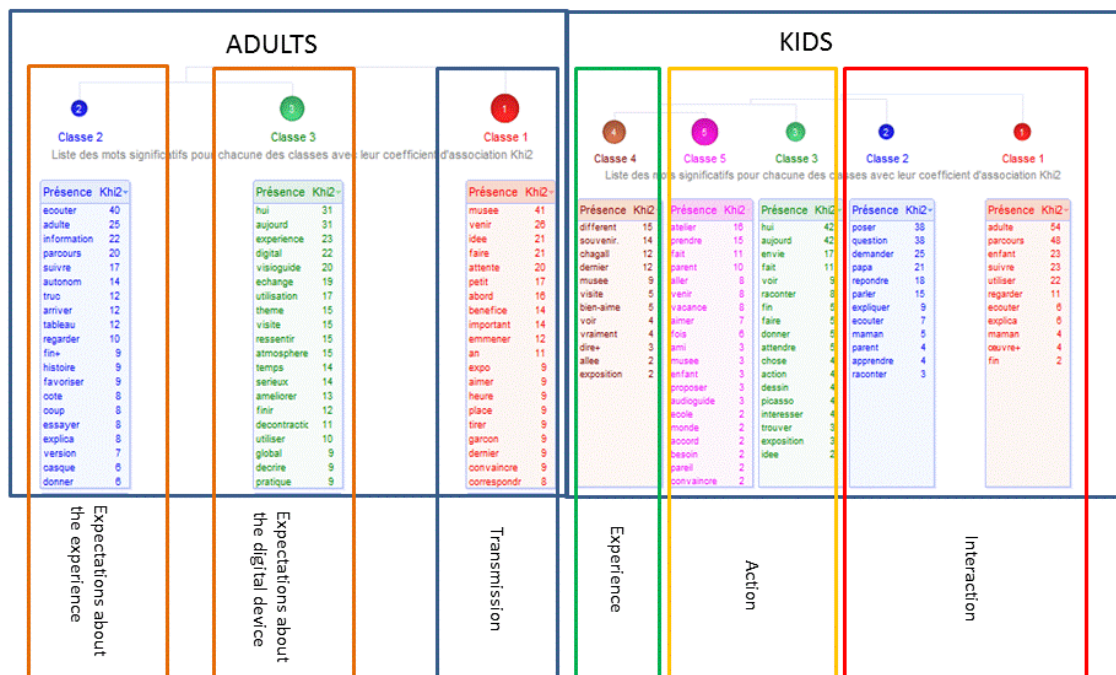

Figure 1: Kids and adults discourse classification with Alceste software

The analysis of kids' discourse shows that kids are close to reality and action in their verbal communication. They are looking for interaction with adults. The digital device (visioguide) is part of their representation of action. It gives them a tool to visit the museum in a playful way. The adults share more cognitive expectations and a need for transmission of values to their kids through museum visit. Adults expect the digital device to allow kids to visit the exhibition in a more autonomous way which diminishes the search for interaction. Therefore, there is a discrepancy in adults and kids expectations regarding the interaction during the visit.

This first result has been confirmed by the analysis of the observation data. Indeed, kids were initiating the interaction while adults were either refusing or rarely accepting a short interaction (figure 2).
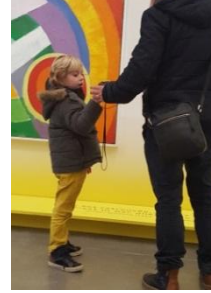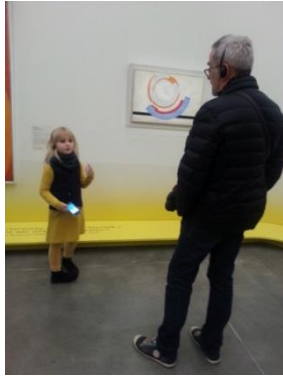
Figure 2: Examples of request for interaction from kids toward adults

The third step was to analyze the observational data. The pairs of "adults – kids" spent in average 51mn to visit the exhibition. The shortest visit lasted 20mn while the longest lasted 80mn. The temporary exhibition *Joie de vivre* in Palais des Beaux-arts of Lille was organized around 8 areas. The *"Atrium"* (figure 3) was a large area located just after the ticket office offering an introduction to the exhibition by focusing on the representation of joy in cinema. In this open space several comfortable and colorful seats were placed in order to give a moment of introspection to visitors before the exhibition. On the right, a wall of post-it was set up. Visitors could write and leave a short message before or after their visit. The Atrium area was appropriate place especially for families to start the visit, set up the digital device before the visit and come back together after.

Figure 3: The Atrium

The following area was the entrance of the exhibition where a neon art work was displayed (figure 4). According to the observation, this area seemed suitable for an interaction where families took pictures of kids in front of the work.
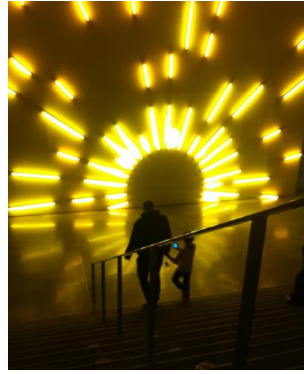
Figure 4: The entrance of the exhibition

The exhibition itself was organized into 6 thematic sections: Under the sun; Happiness, Links, Jubilation, Joyful bodies, and Laugh.

The analysis if the observations lead to one main result, namely the interactional intensity varies throughout the visit. There are more or less favorable moments for interaction. Four key interactional moments have been identified through analysis of the observation data (figure 5):
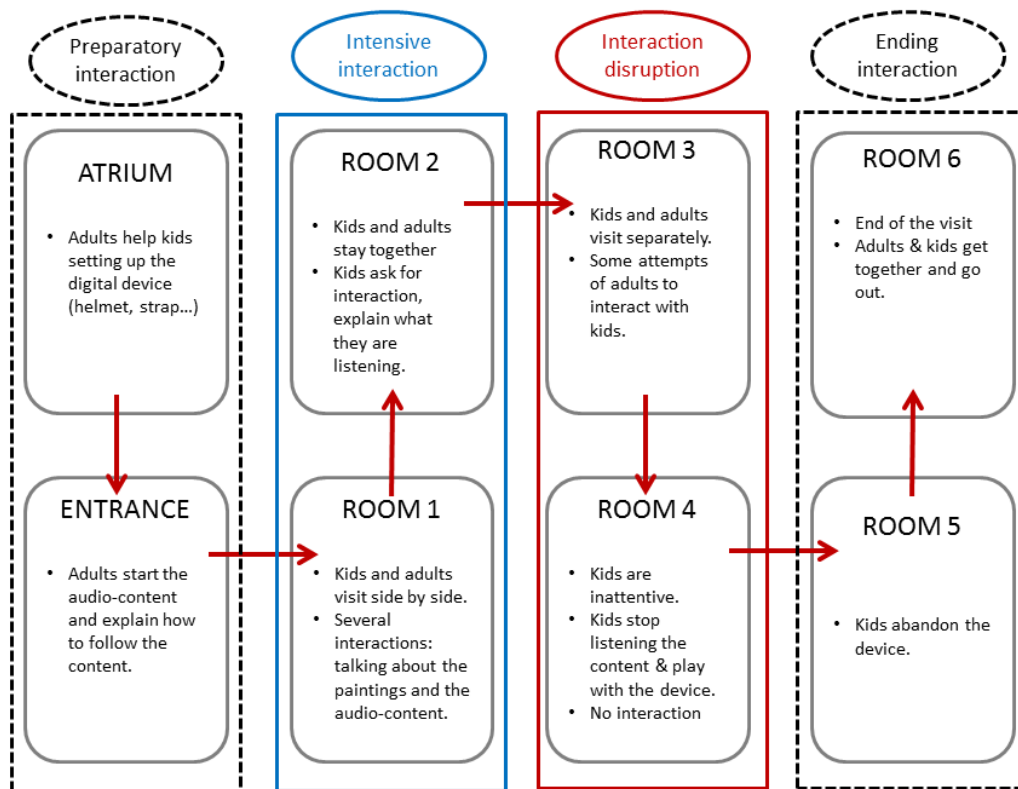

Figure 5: Key moments of interaction kids – adults

The preparatory interactions are related to interactions initiated by the adults: setting up the digital device, explaining how it works, checking that kids have understood the functioning of the device and verifying that they follow the right audio-content. Interactions

(conversationsand affective demonstrations) are more intensive at the very early stages of the visit (rooms 1&2). Most of the time kids initiate the contact with adults by narrating them the content they have listen about the art work. Kids actively ask adults for interaction. Adults tend to give autonomy to kids and don't search to establish contact. In the middle of the exhibition (rooms 3&4) an interaction disruption occurs: kids and parents follow the exhibition independently, contacts are rare and kids tend to become inattentive even stop listening the digital content. The digital device is abandoned the last two rooms. Kids are tired and don't interact.

Discussion and managerial implications

The objective of this paper is to observe how the use of digital devices (namely visioguide) influences interactions between adults and children within the museum visit. Two main results can be highlighted. First, there is a discrepancy between adults and children expectation regarding interactions during the museum visit when a visioguide is used. Second, the interactional intensity between adults and children varies throughout the visit.

Regarding the first result, children seem more interaction-oriented while adults value autonomous way of visiting offered by the visioguide. However, even if the digital device seems to allow children to be more autonomous in terms of learning, they become the interaction catalyst of the visit by initiating the contact with the adults, giving details about what they have learned and engaging the conversation. The interaction is verbal and physical. Indeed, children engage bodily the adults into the visit by taking adults' hand and directing them throughout the artworks. This children behavior is reinforced by their proximity with digital environment at large.
Second, the results have shown that the digital device is a good way to capture the attention of children when they begin the visit. However, their concentration varies during the visit. More broadly, the challenge is to successfully maintain the interest of children throughout the whole visit. The use of a screen (visioguide) in a museum setting represents a huge risk. Indeed, for digital natives screen always win against an artwork on the wall. Hence, the importance to introduce the digital device with the right strategic content which fosters the attention *vs.* dilutes it. The identification of key moment of attention disruption can help museum managers to imagine interactive contents to be included into the digital device (ex. mini-games, challenges between children and adults) which can bring back the attention and reinforce the interaction between both parts.

Conclusion

Considering the specificities of the interaction process between adults and children might help museum practitioners to better design their digital offer. More concretely, this research suggests two main implications for managers.First, it emphasizes the importance for practitioners of being aware that the digital device must be designed as a complement of the interaction *vs.* an autonomous guide. Indeed, the digital content must foster the interaction between adults and children instead of alienating it. Second, museum managers need to leverage the digital content according to the visitors' concentration, especially children ones. They might use some more instructive content when the audience attention is high while some more playful content can be introduced when there is a drop of attention.

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