

# **Towards an ecology of children's participation: how children make meaning with digital technologies in informal learning environments?**

Bronya Calderón

*This study assumes that in order to embrace the totality of all forms of education under the rubric of lifelong learning it becomes important to consider it as a process of living, 'learning as a social practice', that encourage different forms of interactions among learners and engaging in different communities of practice, both in the school and outside the school. Research based on this premise implies a change of focus for studying learning and digital technology using socio-cultural theories and through a process of 'designing' multimodal, multisemiotic and multiliteracy 'activities'. By developing a framework I aim to contribute to our understanding of the relationship between formality and informality and report about the affordances and constrains of the different social contexts and their practices.*

## **INTRODUCTION**

There are an increasing number of settings, namely after school clubs, youth clubs, museums, libraries and parks where children can learn informally. However, there is a need for research in their pedagogic and social role as complementary to formal learning in order to realize their immense potential.

This paper presents a research that draws on a three year longitudinal study of an after school computer club and a series of technology-enhanced workshops at a museum, both in London-UK. The research assumes a change of focus for studying learning more holistically; from viewing children in passive roles to their being more active, from a content-based to a process-based pedagogy, from individual to group participation, from a focus on learning as a psychological phenomenon to one on learning as a 'social practice'. It attempts to bridge the gap that exists between children's uses of digital technology at home and at school.

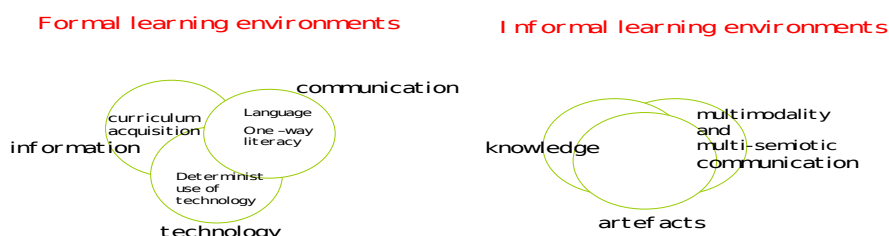


Figure-1 Main difference between formal and informal 'learning environments'

## METHODOLOGY

### Research in an inner-city after school club (ASC)

Research in the ASC focused both on how children chose activities with ICT (laptops, computers) and other activities which were generated taking their initiatives. For example, 'going to the library', playing 'Postman Pat', playing 'shopping', etc.

My early empirical work in the ASC drew on ethnography as a means of exploring children's culture, describing their membership in a Community of Practice and their participation, negotiation and identity process (Wenger, 1998). Data obtained by observations, interviews, informal conversations, reflections and insights were kept in a diary format. Examples of the children's work were also collected. Seeing children as 'social actors', active rather than passive, has implications not only in the methodology, which implies providing children with a variety of tools and resources to allow different ways of expression and communication both verbal and non-verbal, but also in the pedagogy, including issues of power relationship between adults and children, efforts to include children with special needs and ethnic minority groups.



Figure-2 Children's texts with digital technology at the ASC

### Research in the museum

Research in the museum was based on innovative workshops in which children had the opportunity to engage with museum objects; resources such as digital cameras, voice recorders, computers, clay, paint, etc. and used them to create artefacts.

The research methodology in the museum tried to capture children's voices and incorporate them in the re-design process of the activities. Therefore, the range of resources and tools aimed to enable children to make individual choices according to their perspectives, backgrounds, abilities and experiences; while the use of digital technologies aspired to give children opportunities to become more active and independent learners through direct experience, exploration and expression. The framework for analyzing the data looked at multimodality, multisemiotics and multiliteracies as an effort to collect the multiplicity of ways in which children make meaning and the multiplicity of modes, means and materials (Kress, 1997).

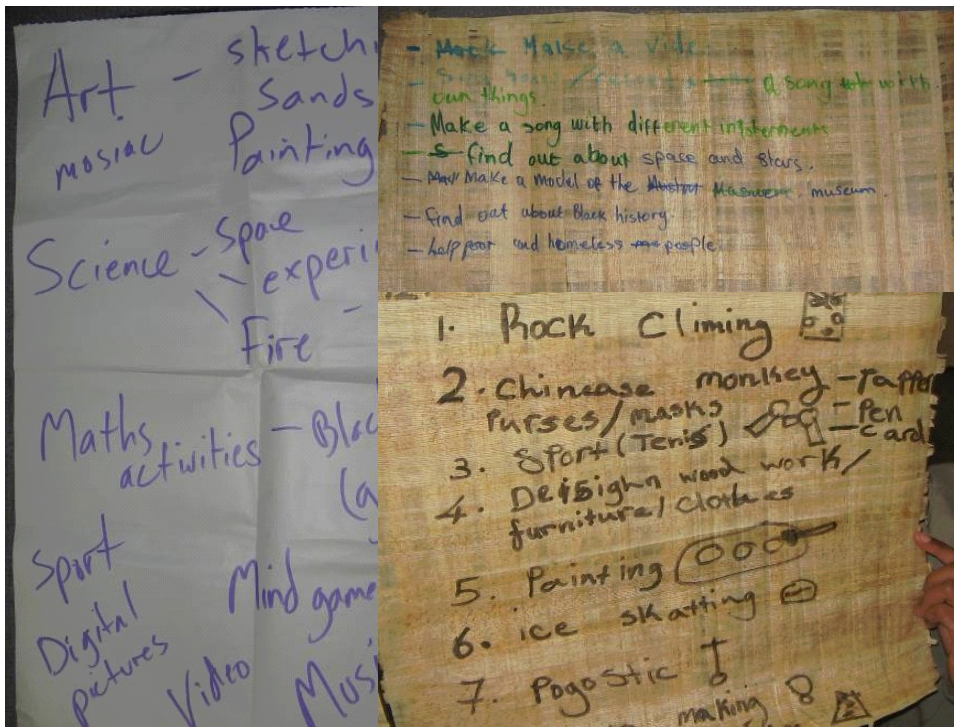


Figure-3 Young people consultation at the pre-visit at the museum.

The left part responded to the question: what kind of things you do at the museum?

The right part responded to the question: What do you like to do at the museum?

## RESULTS

### Results: Research in the after-school club (ASC)

The ASC is part of a borough of a children's services (ages 4-10) and is located in the premises of a mainstream primary school, which is one of the most deprived schools in the borough. The ASC provides service for children currently attending the school. The borough's after school services' aims are to support working parents, carers or those wanting to return to employment. Usually activities offered in that setting are: art and craft, cooking, sports and games. My role is part of a new initiative called 'Study Support Group', which aims to support children's learning through play, although the clear intention is to raise children's achievements at the school. Becoming an informal educator was a constructive process through action- research and began with the urgency to meet the children's needs. This was in direct reaction to the children's antisocial behaviour and rejection to the offered activities which were evident when I first started this position.

My present PhD research proceeds from the findings of my previous Master in Research course, that captured the relationship between the socio-cultural context (children's experience both in and outside the school) and children's attitudes, behaviour and cognitive development. The main findings provided me with information about how children were responding to a child-centred approach. Despite the varied nature of informal learning, I was able to identify some characteristics that describe the functioning of an ILE (Informal Learning Environment), such as participation and negotiation, which conveys the meaning and importance of learning outside conventional educational settings. Younger children and those new to this approach were able to respond more positively than others who have not been exposed to it. These children were also more enthusiastic to try new activities and more active in their participation.

Children in the laptop activity: while interacting with each other they negotiate their social skills; master their ICT skills, engaged in collaborative problem solving and dialogue. Within this context the ASC supports creative uses of ICT both autonomously and cooperatively. Overall, children in the ASC have benefited from the diversity of interactions - age, gender, ethnicity, different skills and learning styles, etc - which not only play an important role to keep children motivated but, more importantly, contribute to the formation of their self-identity, contributing to foster a Community of Practice.

### **Results: Research 'The ArtifaX project' at the museum**

The ArtifaX project is an innovative project, which has been set up for this study. Normally, the museum's workshops for children support the school's curriculum. A further after-school club (ASC) for primary children and a secondary school have been given the opportunity to take part in workshops. The workshops took a child-centred approach, so it gave children the opportunity to use their initiative while using a range of resources and tools to encourage their individual interpretations of the museum objects and the production of creative representations, for example, stories, songs, poems, dance, music, etc.

Children and young people from both settings firstly visited the galleries and, after lunch, they gathered in the ICT room, where they had opportunity to pursue their own interest. My involvement in these workshops was followed up by visits to them in their own settings, where I observed how children extended their activities and I also had the opportunity to conduct some interviews with children and adults.

Data collection included audio recording about children's conversation while in the galleries, the ICT room and in their own settings. It also included some video footage and pictures taken by the children themselves. Another finding which emerged from this informal data was that a more

contextualized and situated experience happened in the museum. Having a wide range of resources, digital technology and some assets (digital pictures, voice recorded and video footage collected while visiting the galleries) in the same environment – the ICT room – provided children with the opportunity to make their own interpretation of the museum’s visit and make more meaningful connections with Art, History, Digital Technology. For example, some children, whilst making a sculpture (Art) to represent some of the objects, were also enthusiastic to use the Internet to find out more about them (History - ICT).

Although there is a growing recognition of informal learning to define the nature of learning in museums, which could imply a broader interpretation of learning than encompasses the encouragement of a wide range of skills, behaviours, dispositions and experiences, museum’s interpretation of learning is still confined to the achievement of formal curricular. The concept of Legitimate Peripheral Participation (Lave and Wenger, 1991) is also helpful to understand how museums define their role within a Community. How they define their practices and how they decide to participate in the social world. From this analysis one can conclude that only the learning which happens in schools is legitimate, and how museums are failing in their role to promote social inclusion. Children and young audiences have no opportunity to renegotiate their interpretation of objects or engage in free-choice learning that could lead to the recognition of different skills and learning styles; in other words, to facilitate lifelong learning.

## **DISCUSSION**

### **Theorizing informal learning**

A preliminary analysis of the data suggest a continuity of experience which children have in different settings, such as home, museum, etc., influence the way in which children give meaning to their experiences. Children’s knowledge, attitudes to learning, motivation, skills, etc., are formed, not just at school, but also cumulatively across the different settings and in a development trajectory. This finding concurs with Dewey’s (1963) principles of habit and principles of continuity; that experiences shape a child’s attitudes, which could be emotional and intellectual. Children’s views about activities are extreme, either ‘fun’ or ‘boring’; school is supposed to be places to work and learn only while the ASC is seen as places not for learning but for leisure. Children in most of the settings, such as schools, clubs and museums do not have the opportunity to choose how to make sense of their experiences. Both schools and ASC are designed to meet society’s requirements of providing an education but often fail to recognise children as individuals and their development.

Wenger's (1998) theory of Community of Practice has been useful to identify the nature of informal learning, under the concepts of: negotiation, participation and reification. How children negotiate their participation in an emerging activity contribute to their development of self-identity. This could be seen as an opportunity for self-reification, children putting into practice previous knowledge (from school), making relevant connections, trying new ideas, skills, etc.

The social nature of informal learning could be explained as follows: as children embark on an emerging activity in a collaborative enterprise, children are forced to take a position, to be someone, and encounter difference, while being exposed to the points of view of others. This coincides with Osberg & Biesta (2004) pedagogy of invention as opposed to one of pedagogy of transmission, i.e. encouraging innovation rather than repetition of existing ideas.

### **Communication**

Informal learning environments promote different models of communication than in school where the unequal power relations exist between adults and children and where classrooms group children of the same age and therefore similar stage of development. My research involved collecting data within an intervention approach where the adult takes the role of a facilitator, allowing a more equal relationship, which has permitted me to interact with them and, to some extent, guide child participation and cognitive development. As Piaget noted, "child's socialization with his fellow is greater than, or at least different to, his socialization with adults alone where the superiority of the adults prevents discussions and co-operation" (Piaget, 1977, p.165)

The data collected in the ASC shows how children are more receptive to listen to their peers rather than adults; this could be interpreted as children taking an active role to shape the culture of their setting and becoming participant members of their communities. Children scaffold each others learning, e.g. social and computing skills, which are facilitated by the diversity of age, cultures, skills, etc. According to Vygotsky (1978), ideal partners should not be equal, as he believed inequality in skills and understanding could bring about cognitive growth. My role as a facilitator took me to observe children's ways of interactions to not only be able to understand them but also recognise their perspectives and embrace them.

### **Digital Technology**

The contextualised experience offered in the M was facilitated by the way how the workshop and the ICT room have been set up. Having technology and a wide range of resources together in the

same room, encouraged children to be creative and flexible, while engaging in ‘meaning making’ practices. For instance, the ArtifaX workshop in the M offered children a more holistic way to understand learning that blurs the line between; real-virtual, mind-body, work-fun, individual-social, formal-informal, dichotomies. Children engaged with objects through their senses (taking pictures) and emotions (a personal, meaningful connection with the object, e.g. Cultural, topical, etc) both while exploring them and choosing to make a representation of their experiences (making sculptures, narratives with pictures, blog websites).

The data collected in the ASC and in the M show creative ways to use digital technology, which seem not only to be an extension of children’s abilities and interests but also as a way to engage in collaborative enterprises. This research, ‘children learning in informal settings with digital technologies’ has been a tool to analysing the emerging relationship between objects, learners and digital technology in schools and outside schools. This led me not only to consider sociocultural theories and multimodal methodologies - to be able to take account of the diversity of learning that happens in informal learning - but, more importantly, to see children as ‘social cultural agents’, who can decide for themselves.

## **CONCLUSIONS**

This paper argues the necessity to consider children’s experience using digital technology both in and outside the school. A child's digital technology literacy, understanding of media, their habits, pleasures, and preferences are formed across a variety of experiences gained in many different environments; not just as cumulative knowledge, but also ‘with time’ in a developmental process across different spaces and social contexts. The meaning of computers and digital technology in schools is quite different from their meaning in an informal learning environment. In this paper I have argued the necessity for social recognition of informal learning environments; the negotiation, participation and identity as the attributes of informal learning that are ingredients of learning as a social practice.

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Author details:

B. Calderón is a pedagogy, educational technology researcher and consultant of [www.spaces4learning.org](http://www.spaces4learning.org)

<http://spaces4learning.ning.com/>

E-mail: [bronyacalderon@yahoo.com](mailto:bronyacalderon@yahoo.com)