

The BEAST! Project

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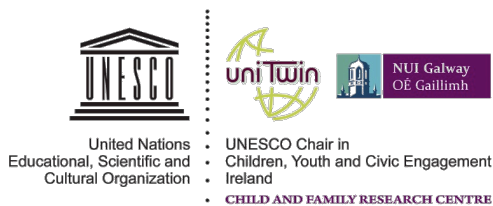


Baboró:
Environment, Art, Science & Technology

Introduction

This document summarises the key learning arrived at from three research reports that focused BEAST! (Baboró: Environment, Arts, Science and Technology) project. The project is an educational arts and science initiative for primary school children predominately aged between 9 and 12, developed and operated by Baboró in Galway, since 2012. The focus of the project was to work with schools on achieving a higher profile for science / technology (STEM¹ subjects) by using the arts as a teaching methodology.

The rationale behind the BEAST! project is the view that *“Arts and creative activities are of enormous benefit for young children as they engender confidence, encourage critical reflection and creative thinking and provide a powerful base for team working, problem solving and future development”*.



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¹ STEM subjects include science, technology, engineering and mathematics.

Key Learning about BEAST!

1. The BEAST! project engaged expert scientists and artists to work with schools using an innovative approach, to achieve a higher profile for science/technology (STEM subjects). This was done by encouraging children and their teachers to explore these subjects through the arts, including filmmaking, puppetry, theatre sculpture, and poetry amongst other art forms.
2. The research found a high level of engagement in the workshops by children and teachers. Children talked about changes in the ways that they perceived science and showed a deeper understanding of science concepts. Parents noted their children demonstrated an increasingly positive attitude towards science and that their thinking about the role of science had changed.
3. Children were taught about various art forms in a highly engaging and collaborative way, allowing children to learn about the societal value of the arts and about the importance of collaborating and sharing with others.
4. Teachers were very positive about the benefits of the more open, creative and flexible approach adopted by the science and arts practitioners and stated they were adapting their own teaching styles, to incorporate cross-curricular and more creative and interactive approaches.
5. The research process provided space to consider and develop a theoretical base for BEAST! from the academic literature, linking the project to concepts such as collaboration, creativity, engagement and participation, creative teaching and creative learning.
6. Research evidence from BEAST! has clearly shown that that creativity is a multi-layered concept that involves multiple actors participating in continuous interactive

processes of knowledge sharing, learning and engagement

7. Embedding an ethos of creativity in the curriculum is not a linear or straightforward process. There are numerous barriers to enhanced creativity that include attitudes towards creativity and knowledge, behaviours established practices, time and resources and others that mediate against improving creativity in the curriculum.

Background

Improving young people's access to the arts is central to the mission statement of Baboró and in particular, that children have the right to high quality creative experiences, regardless of socio-economic, geographical, cultural, physical or intellectual statuses.

As part of its remit, Baboró engages with families and children in schools and in the wider community. The outreach work with schools has become an important focus of the work and as part of the schedule for 2012, Baboró targeted a cohort of eight schools in County Galway with a new project entitled BEAST! (Baboró: Environment, Arts, Science and Technology Project). Baboró engaged in an outreach partnership with the Ryan Institute at NUI Galway to deliver the scientific elements of the project. The Institute facilitated the recruitment of academic staff along with postgraduate students and a postdoctoral researcher. The Ryan Institute also facilitated the scientists to refine their proposed workshops to make them appropriate for young people. This process of translating so-called 'objective' scientific facts into information that is usable, accessible and interesting for children was an extremely important element of the project.

To ensure that this was achieved, scientists drew on numerous interactive teaching resources, to teach children about matters like sustainability, wind power and energy usage. To effectively do this, scientists also consulted with teachers to gain experiential and tacit knowledge of dynamics in classroom environments that could affect workshop delivery and the receptiveness of children to using interactive resources like those proposed.

In addition, Baboró developed collaborations with various artists to work alongside the children, scientists and teachers in the schools, the aim being to facilitate children to express scientific ideas through the arts.

Because of the success of BEAST! 2012, captured in *'Magic can Happen – A Process Study Report of the Baboró BEAST! Project'* carried out by O'Sullivan, Moran and Forkan, social scientists at NUI Galway, Baboró extended the project for a further two years (2013, & 2014) The report on the second phase of BEAST! was entitled *'Captivating Children through Cross Curricular teaching of Science, Art and Technology'* (2013), while the third and final report was called *'Co-Creating the Legacy'*.

A thematic summary of the key learning from the three years of the BEAST! Project is offered next.

Collaboration

The widespread collaboration and team working that took place with the young people; collaboration between science and arts practitioners and teachers was a strong feature of BEAST! Both teachers and children appreciated the opportunities to collaborate with practitioners: *'The teacher is needed to bring their philosophy, teaching skills, [knowledge of the children] to support the practitioner and need to be involved in the drive and direction to increase their [and the children's] level of commitment...children felt they owned the project.'* (Teacher 3)

The research also found that teachers and science and arts practitioners modelled good collaborative practices in the workshops and the children learned from observing these. They were very supportive of each other in situations where there was competition for tools and other resources.

Another strong feature of BEAST! was the collaboration developed between Baboró and NUI Galway's research community.

The Role of Creativity in the Curriculum

The concept of creativity lies at the heart of the entire philosophy underpinning the BEAST! Project. Encouraging young people to be creative, to think outside the box and take

pride in their own uniqueness and individuality was central to the success of BEAST! These concepts were also pivotal to the teaching methodology, and how it was operationalised by the scientists, teachers and artists who participated. Moreover, BEAST! generated insights on the conditions that foster creativity in science and arts education in case-study schools, culminating in highly important findings about socio-cultural dynamics that both help and hinder the enrichment of creative processes and their subsequent 'embedding' in primary school curricula. Most especially, the research illustrates that in order for creativity to blossom, it requires the 'buy in' of all actors who are involved in creative processes (i.e. teachers, artists, parents, scientists), who must respect and value the knowledge and input of one another, which in turn, significantly enriches the process of cultural learning. Importantly, the project highlights that scientists, artists and teachers interpreted creativity in diverse ways, and their understandings of what it means to be creative impacted on their relationships with one another and with the children. An essential precondition for creativity is the recognition that its ultimate success or failure in classroom environments depends principally on 'trial and error' – thinking about how to engage with children and young people in different ways and learning from one's mistakes. Creativity is an inherently 'messy' process, and it is reflective, inciting a continuous process of self-reflection on the part of educators about what it means to be creative and the role of the human senses (aural, visual etc.) in shaping one's own experiences of learning and teaching. Overall, the enhancement of creativity requires a shift in mindset, a stepping outside of oneself towards a deeper recognition of alternative understandings about what it means to teach and learn.

Cross Curricular Engagement and the BEAST! Teaching Methodology

The BEAST! approach to learning and teaching was based upon the premise that 'hard' science disciplines including physics, chemistry and mathematics, could be taught in a more engaging and creative manner, through the medium of the arts. Current education policy in Ireland and internationally stresses the importance of improving children's

engagement with science and technology areas. The teaching philosophy of BEAST! emphasised that creativity is an essential element in scientific knowledge discovery, and that children's science learning can be enhanced through engaging with science disciplines in a collaborative way. The cross-curricular method goes beyond didactic approaches to teaching and learning that emphasise 'linearity' and knowledge transfer.

In contrast to this, BEAST! operationalised the principle of knowledge exchange and stressed the value of children's creative practices, their relationships and knowledge. In addition, the cross-curricular approach fostered relationship-building between all 'actors' in the creative process including scientists, teachers, artists and parents. Qualitative evidence suggests that all stakeholders (artists, scientists, teachers, parents) were supportive of the cross-curricular approach and children and young people reacted positively to the teaching method overall. An essential pre-requisite for the adoption of a cross-curricular approach is a high level of commitment on behalf of all persons engaged in the creative learning process. All 'actors' must be willing to work together and the approach seemed to be particularly effective when scientists, artists and teachers collaborated with one another in devising lesson plans, and shared ideas about what each of them wanted to achieve through the interactive class sessions. The role of the teacher in providing experiential knowledge about the culture of schools, their overarching teaching philosophies and 'practical wisdom' about what works in the area of creative practices was pivotal to this. Overall, qualitative evidence from the BEAST! Project implies that the cross-curricular approach was important for inciting children's enthusiasm for science subjects, while scientists and artists interviewed also commented that they learned from each other and from the children. From the perspective of the university, the cross-curricular method is significant for strengthening relationships between members of the research community, and marks an interesting moment in the ever-evolving relationship between the university and the wider community.

Providing Conditions in which Creativity can Flourish

Research over the last three years on the BEAST! Project has strongly shown the need to provide conditions in schools to enable creative teaching and learning to flourish. These conditions can be summarised as follows:

- The culture and environment of the School should be conducive to creative practices
- Full buy-in by school principal and teacher
- Supportive attention and respect of other teaching staff
- Clear criteria for activities and scheduling with flexibility built-in
- Openness to the ideas of children, parents, teachers and practitioners
- Extensive collaboration with expert arts and science practitioners
- Opportunities for choice and discovery of different art forms
- Teach and model techniques and strategies for creative performance, by building creative skills
- Stimulate and reward curiosity and reflective thinking
- Model willingness to experiment, fail and change
- Continue building the strong links between Baboró and NUI Galway.

Conclusion

To be completed

About

Baboró's mission is *to inspire children to engage with the world through their experience of the arts*. Baboró International Arts Festival for Children is Ireland's flagship international arts festival devoted exclusively to children and families. For more see <http://baboro.ie/>

The **UNESCO Child and Family Research Centre** based in the Institute for Lifecourse and Society (ILAS), NUI Galway, engages in research, evaluation and service design relating to practice, policy and interventions in the lives of children and families. For more see <http://www.childandfamilyresearch.ie/>

