Communicating astronomy to nursery school and primary school children, within multicultural contexts using non verbal languages.

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Special thanks to the puppet maker Mariano Dolci

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"The skies of the world", is a project carried out by the Arcetri Astrophysical Observatory (Florence) with the idea of exposing primary school children to the fascination of the night sky as seen in different parts of our planet.

The project was based on the fact that children are able to ask questions about, and reason about, the world around them, especially when they are stimulated and emotionally involved. Children all over the world, from every culture and social class, will always look up at the sky and see the moon and stars. The wonder of the starry sky and the desire to understand how the world works are stimuli for all children. They may not all become scientists, but it helps them to make their own independent decisions and judgements.
In this project, children were treated as individuals who have the ability to make up and tell new stories and myths to describe and explain the sky, the stars, constellations and the moon.
This method was inspired by Loris Malaguzzi, a famous Italian pedagogue. As a middle school teacher in the Reggio Emilia district of Italy in the immediate aftermath of the Second World War, Malaguzzi was instrumental in founding an approach to young children's education which is based on mutual respect and reciprocity between teacher and child, and the philosophy that teaching and learning embodies a relationship of equality and democracy, rather than a relationship of power in which the teacher dominates.
His travelling exhibition *The Hundred Languages of Children* (originally entitled *If the Eye Jumps Over the Wall*) was instrumental in bringing his educational philosophy to a wider audience of teachers and parents worldwide. Opening with the word, ‘The child is made of a hundred’, Malaguzzi's manifesto goes on to say: “The child has a hundred languages (and then a hundred hundred hundred more) but they steal ninety-nine. School and the culture separate the head from the body. They tell the child to think without their hands, to do and make without their head, to listen and not to speak, to understand without joy, to feel love and awe only at Easter and Christmas. They tell the child to discover the world that is already there”
In accordance to this philosopher ‘s method, in this project, children were treated as having the ability to make up and tell new stories and myths to describe and explain the sky, the stars, constellations and the moon.

The project started in 2006 in an Italian state school in a suburban area of Florence named Brozzi.

In an Italian state school called Gandhi in the Brozzi area of Florence which had children who came from different parts of the world, made it possible for us to use myths and legends from different countries.

About a quarter of the children come from Chinese families; Brozzi is full of Chinese shops and businesses. Most of the children did not know much about Chinese myths and legends, and only a few of them knew the Western ones. So myths and legends were an important part of the discovery process.
Usually informal educational activities for children used in science education are “hands on,” but you can’t touch the sky and the stars. This is a basic problem, and it meant that rather than children’s love of touching and feeling objects, we had to involve their emotions and desire to see.
There were three main phases in the project, which lasted for one year.
1. A lesson on Chinese legends about the sky given by astronomers from the Arcetri Observatory.
2. Classroom acting outs of Chinese myths and legends using different techniques of expression and dramatisation. Guided by teachers, cultural mediators and astronomers from Arcetri.
We believe that telling stories from different cultures helps to make the sky even more fascinating. It is also a way of drawing attention to the differences between cultures and appreciating those from far away. We hope that children will be motivated to look up at the sky with interested eyes, ready to make new and exciting discoveries.
G. Carro babilonesi
Latini
Cina popolare
India dell'est
Credits Lara Albanese  The Milky Way (vol. 1) ed Jaca Book
The Chinese and Italian sky are more or less the same because we are at the same latitude.
There are many Chinese myths and legends about the moon and seasons, but we chose to use another very well-known story, ‘The Princess Weaver’ because it involves different constellations. Vega is near the northern vertex of the small parallelogram of stars known as the Lyra, invented in Greek mythology by the god Hermes (Mercury.)
Chi - Niu, the daughter of the Emperor of Heaven, was a very expert weaver, and she sat every day by the heavenly loom, the small parallelogram next to Vega. The princess was expert at weaving the colours of the dawn and the sunset.
The planetarium can project over 360 degrees rather than simply onto a flat surface. This is a very positive characteristic and is potentially interesting for narration of any type using shadows, not just astronomers. It makes children and spectators in general feel extremely involved in the story.
In ancient China the shadow theatre was originally used for the veneration of gods and also to chase away ghosts and monsters. It subsequently became a form of entertainment, as it still is today.
Thanks to the cooperation with the Italian expert in Chinese shadows, Mariano Dolci and the contribution of children, teachers and astronomers, it was possible to use this technique in the peculiar structure of the planetarium.

It is possible to use this technique even if there isn’t electricity, just a petrol lamp!
The children in Brozzi produced the shapes for the shadows in many ways. Some used black card. Some used cut out photographs of themselves to give a profile. Some used the overhead projector to make the shadows move on amazing coloured backgrounds.

Of course, with children from other cultures, other types of performance or show may be preferable. This method is particularly good for recounting myths and legends from different parts of the world.
Relying on the belief that every child has got his own favourite language to communicate and that the variety of languages helps to understand the world the project has been realized thanks to the cooperation of astronomers, pedagogues, puppet makers, cultural mediators and children, of course. In particular, the shadows' theatre allowed us to overcome the barriers due to the spoken language. The great success of this kind of approach allowed children to play an important role in a situation such as the one developed inside the planetarium, where people usually keep a passive attitude.
In the next two years, thanks to the EU-UNAWE project (European Commission FP7th) we will disseminate the “Sky over world” ideas around Italy.
The word’s skies is a project which is open to new contributions and collaborators. You may contact us at the following e-mail address

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Thank you!