Once upon a time a fisherman...

Science Theatre at INGV

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"All the world is a stage. And all the men and women merely actors"

W. Shakespeare - As you like it
Il teatro è vita in economia…

Leo de Bernardinis
Colapesce the legendary brave fisherman of Messina
Can we communicate science through fictional narrative?

Can we remember scientific information included in fictional stories?

How is science credibility affected when information is communicated in a fictional narrative way?

- *Nitrogen* by Primo Levi
- *The crabs Take Over The Island* by A. Dnieprov

Two short stories with scientific content were adapted to be no more than 2 A4 pages.

Questionnaires were used to evaluate the amount of scientific information individuals learnt from the stories (measured through memory tasks: recognise, recall and contextualise. Stainberg 1998).

The results of this study as a whole suggest that:

- Science can be learned through literary stories and that this represents an important means for science communication to transmit information in an accurate, memorable and enjoyable way.

- That narrative information is retained for lengthier periods than factual information in long-term memory.
Using myths in a class-room

• Since myths are type of narratives, such as fairy tales and short stories, they can be potentially charming.

• Together with Negrete, we explored the possibility of using them in a class-room, with a positive potentiality. (T. Lanza & A. Negrete 2007 From myth to Earth education and science communication in Piccardi, L. and Masse W.B. (eds) Myth and Geology, GSL, London, Special Pubblication, 273, 61-66)
Myth plus Science Theatre

• To pass from theory to practice, I have proposed to INGV colleagues to use the myth of Colapesce to commemorate the 1908 Messina Earthquake

• A new way to do it was to act the content of the Colapesce story and the scientific content related to the earthquake. In other words, to bring all this in a school theatre
Towards the performance

The play was performed the 27 March 2009 in the framework of the XIX Scientific Culture Week

- **First step**: writing the script
- **Second step**: the script was given to the teachers that together with the directors chose the actors and suggested some fundamental changes
- **Third step**: almost three months of preparation all together
The script

- The story of Colapesce was readapted to include a modern scientific content acted by the IV primary school pupils (9-10 years old) starring INGV Seismologists
A seismometer was part of the plot and brought into scene by the young scientists who discussed about it with the legendary King of the Colapesce Fairy tale who believed it was a bomb!
It was a success!!!

...but what next?
• Did they learn something about earthquakes?

• Did they understand what it means risk management and risk reduction?
Or it was just a way...

to amuse themselves?
The evaluation process aimed at verifying:
• if the project promoted the seismic risk knowledge
• And encouraged the acquisition of individual and social behaviour for risk preparedness
Evaluation tools

Data La Longa - Crescimbene

• 1 Duss Fairy tale test (adopted for the 6/7 ys schoolmates)
• 2 Semi-structured questionnaire on the Colapesce story (for the 9/10 ys schoolmates)
• 3 An open form for the teachers’ evaluation of the whole experience
Results 1 II class students

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We note that the graph concerning the group collaboration presents the highest negative scores.
Results 2 IV class students

Data La Longa - Crescimbene

We note that the 93 per cent of the students have a good seismic knowledge, while only the 7 per cent seems to have acquired a seismic risk awareness.
Results 3 - Teachers’ evaluation

Data La Longa - Crescimbene

The teachers have given a positive feedback about the whole experience as an efficacious way to transmit scientific content but suggest to involve more the children in the script writing and in the setting. The IV primary students have reinforced their knowledge about earthquakes thanks to the experience of dramatisation.
Conclusions

• The science theatre experience has been extremely positive for its dramatic characteristic allowing an emotive involvement of all the participants. BUT…

• Concerning the complex action of the risk reduction it is necessary to include the science theatre experience within an educative project
Suggestions
for future experiences

• To make clearer the scientific content in the set: the seismometer and a seismic map alone do not guarantee a knowledge transfer about earthquakes and risk reduction
• To clarify in the project the aims to reach
• Involve the schoolmates in the whole theatrical experience: script writing, setting, music

• in other words…
The performance preparation is much more important than the performance itself!!!

THANK YOU!!!