

**Science journalism as a way to engage children and teenagers
in the science and society dialogue**

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Abstract

In the last two years Sissa Medialab designed, tested and evaluated two projects aiming at empowering children and teenagers to act as science journalists, in order to promote a personal, critical attitude towards science and technology. A paper magazine and a blog were produced with a participatory process, in which adults acted as facilitators and experts on demand, but young people were the leaders of the process. Special care was devoted to ensure social inclusion and gender balance. We have found youth journalism an effective way to help children to explore the relations between science and society and to express their opinions on them, while discovering the fascination of the scientific endeavour in direct contact with researchers in their own work environment.

Introduction

Sissa Medialab (Trieste, Italy) has been working to promote the children engagement in science for many years. One of our first significant projects is Mini

Darwin®. Mini Darwin® is a series of expeditions (e.g. to the Galapagos islands and to Italian volcanos) where scientists and children worked together to explore, discover and develop a personal interpretation of the environments and observed phenomena. The combination of children and scientists working together is very stimulating, fruitful and rewarding for both children and researchers. The products of the expeditions (books, documentary, exhibitions) have been original and stimulating: on the one hand they include the authoritative voice of scientists, but on the other hand they are shaped by the interpretations of the children and their points of view, that are original and inimitable.

After Mini Darwin® many other projects have followed, but all of them have been characterized by our efforts to listen children's voice and, more important, to engage them as much as possible as partners and not only as passive receivers of the science communication. However, in recent years this general approach of Sissa Medialab programmes has evolved becoming more radical, and the last two projects of children and teenagers journalism were designed as participatory projects in which young people own processes and results, and adults act as facilitators only.

This approach has been pursued also thanks to the participation to Sis Catalyst, a four-years long European project funded by the European Commission and aiming at exploring with what strategies and tools children and teenagers can be empowered to actively participate to the dialogue between science and society. Core challenge of the project is to investigate how children can be listened to, how they can be given the chance to express their views, and how they can be empowered to build their own relationship with science, and thus a sense of ownership for scientific knowledge. As Matteo Merzagora and Tricia Jenking (Sis Catalyst coordinator) stressed: *“listening to children and empowering them is not just a choice, but an obligation for all states who signed the UN convention on the rights of the child. Indeed, article 12 states that we ‘shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child’. Which links do or shall exist between these fundamental principles endorsed by our governments and science communication activities addressing children?”* (Merzagora & Jenkins 2013).

In this paper we present and discuss two attempts to merge the science and society agenda and the search of good practices to listen and empower children and teenagers.

The projects

Boiling the “Primordial soup”. The magazine entitled by the children “Jota primordiale” (a humorous transformation of the expression “Primordial soup”, where “Jota” is the Trieste typical soup) was designed and produced by a group of 10 children aged 9–13, recruited in one of the 13 children centres of the Trieste municipality. The choice to recruit and operate in these free of charge public institutions guaranteed the inclusion in the project of children from diverse socio-economical backgrounds. The children volunteered to participate and, during the six months of the project (November – June 2012), they attended a weekly two-hour meeting facilitated by an educator from the children’s centre and 2–3 facilitators from Sissa Medialab. The initial assignment was to develop a children paper magazine dedicated to the research and the research institutes active in the town. Beyond this task, the young reporters were totally free to decide the format of the magazine, its sections, the topics to be tackled, and the information they wanted to collect. Moreover they were in charge of the interviews and of the production of photos, videos and texts. Children were assisted in their tasks and equipped with professional tools, such as photo and video cameras, but no formal training in journalism was offered to avoid the imposition of adults’ points of view and traditional approaches. Facilitators tried to make the technicalities of the reporter work emerge from the repetition of one fundamental set of questions focusing on the audience needs: What would the young readers like to know about that? Would the readers like that? Would the readers be able to understand that? Does this title express what you want to express? Etc. In other words: imagining young readers’ reactions, putting themselves in the shoes of the audience, the children were guided to discover and understand the rules, techniques, tips and tricks of science journalism. The materials (videos, interviews, texts, etc.) were produced during four trips to local international scientific institutions (Figure 1), thus provoking two more positive side-effects: *a*) letting the scientists be infected by the enthusiasm and openness of the children, and *b*) making the local scientific institutions

better known among the young people and, through them, to many other children and families.



Figure 1

The project was carefully evaluated, and a Master's thesis of the Master's Degree in Science Communication of SISSA was dedicated to front-end, formative and summative evaluations. Many aspects of the "Jota Primordiale" were scrutinised through the evaluation surveys: the perception of the experience in the young reporters, what their parents observed, how the participatory process developed in the eye of the evaluator, etc. The evaluation included the appreciation of the printed magazine among children's peers. 5000 copies were distributed in Trieste schools and the opinions of the young readers were collected during 12 meetings held in classes of children 9-12 years old for a total of 282 pupils. The evaluation showed dramatic changes in the children who participated as authors, both in terms of acquired self-confidence and growing interest towards scientific topics; the children especially appreciated the distance between this experience and the

science education they were receiving at school, so much more “boring” and “difficult” because far from their interests and often unclear in its motivation and goals.

But the project was also found successful when the impact on the peers was considered – the young readers gave a very positive feedback on the magazine, both regarding the contents and the look. Leaving the ownership of the project to the children was therefore not only a good way to offer them a positive experience of engagement in science and technology, but also a good way to produce a media product more suitable to meet peers’ interests than any commercial product developed by adults.

The blog “Dove mi butto?” (“What should I get into?”). The blog “Dove mi butto?” (“What should I get into?”) was instead developed and run by 16 teenagers aged 17 from the Italian Sardinia region. A Science Reporter Summer Camp was organised in Polaris, the Scientific and Technological Regional Park of Sardinia that also promoted and financially supported the programme (17-21 June 2013). The teenagers were recruited by advertising in all secondary schools of the region: the students could send in a very simple application form (basically only volunteering to participate), and 8 boys and 8 girls were randomly chosen. This random selection allowed us to be, as in the case of the “Jota Primordiale”, as much as inclusive as possible: the final group in fact included kids from towns but also small villages, very good at school or with learning difficulties, very interested in science or just curious about the journalistic side of the project. They were hosted for a week inside the park, and were supported in their tasks by Sissa Medialab facilitators, who also provided photo cameras, video cameras and other technical devices. The teenagers freely designed and produced their blog, which aimed at presenting the Park to their peers from their point of view. In particular the young reporters chose to focus the blog on the exploration of possible future careers in science and technology (Figure 2). Dedicated to “the young and confused”, as the subtitle explains, the blog “Where should I get into?” has tackled issues as: What career opportunities might science and technology offer to me? What research fields, what university studies, what roles and positions? Etc.

Every day, after visiting laboratories and interviewing scientists, the teenagers produced material for the blog: articles, video interviews, photo galleries, etc. Even if the

participants were all between 17 and 18 years old, and therefore belonging to the so called “digital natives” generation, surprisingly most of them had no computer at home and no computer skills whatsoever, and the facilitators were to assist them to implement the blog. The 16 participants to the project presented their blog and experience during the Fair of Innovation held in Cagliari the 13th of July 2013. After months from the end of the Summer camp, many of the participants are continuing to write on the blog following their personal interests and contacts with local institutions.



Figure 2

The value of youth science journalism

Both experiences have confirmed us that youth science journalism is a very effective way to engage children and teenagers in science and technology, and it can enrich the range of programmes that are currently organized by science centres, museums, research institutes and other informal learning programmes such as children universities, children centres etc. We consider youth science journalism particularly valuable because it helps to move from the mere engagement of young people with

pleasant science activities towards their active involvement in the public participation in science and technology (Merzagora & Rodari 2013). To listen their opinions, to include their points of view, to empower them to build their own relationship with science is a new challenge of the science communication field, that does not exclude previous successful practices but helps to answer to new societal needs. All over the world scientists, science communicators, public officers and other stake-holders are promoting the participation of adults in the discussion about the sustainable development, the impacts of technologies on contemporary society, the controversial issues that scientific applications might involve; at the same time, after the UN General Assembly adopted the Convention on the Rights of the Child (UNCRC), many governments and public and private bodies are working to apply these general principles and foster the participation of children in the discussion of their present and their future (Cook et al. 2004; Landsdown 2005; Welty & Lundy 2013). Youth science journalism is certainly a limited action (and of course not the only possible), but line up with both contemporary trends.

Going into the details, a combination of several positive features distinguishes and makes this approach particularly valuable in our opinion.

Youth science journalism as a door to science and technology. Writing, blogging, producing photos or videos are powerful hooks to engage children and teenagers who are not particularly interested in science or even are scared by science as presented in formal learning. In our experience, once involved in a personal investigation all children and teenagers discover what there is of interesting for them, i.e. discover that science and technology are fascinating, multi-faceted and broad areas of investigation and work that can be considered as options for their future career and, in any case, a fundamental aspect of human life and society.

Youth science journalism for inclusion. Considering the variety of competences and roles required to produce a reportage, a documentary, a magazine or a blog, all children and teenagers, irrespective of their previous knowledge or ability, can find the role in which they feel most comfortable and can better express their personality. On the backstage or front stage, taking notes or controlling the technical parts, writing or looking for iconographic material, nobody feels excluded or inadequate. In both projects, in which as told participants were different for social background and personal abilities and

included young people with mental disabilities or reported behavioural problems, participants worked in team very effectively and in an atmosphere of reciprocal respect and fondness.

Youth science journalism and the understanding of the media system. Young people, especially the youngest ones, are “natural” reporters: curious, open-minded, outspoken and straight to the point of issues. At the same time, since children are heavily exposed to TV, radio, and the mass media in general, they absorb many key features of the media language - many children and teenagers, as an example, turned out to be perfect anchor-men or -women, and were able to conduct interviews with the rhythm, the style and the humour of the best professionals. However, the youth journalism experience makes them more aware of media languages and rules, and helps them to interpret critically the information they receive through mass media and Internet.

Youth science journalism and science in society. Science journalism also helps to put scientific knowledge into context, making young people to discover not only the fascination of scientific endeavour but also the links between different disciplines and between research, technology and society. They meet real scientists, and get a glimpse of the real scientific work: laboratories, machinery, procedures, teamwork and international collaborations, funding and research outcomes, etc. They are faced with issues such applications and impacts, expectations and concerns, and begin to understand that also their opinion is valuable and can make a difference.

Young science reporters as ambassadors for science and technology. Finally the young reporters are good ambassadors for science and technology towards not only their peers, but also their families and communities. They are able to use language and style that attract their peers, and to interpret general attitudes of communities.

Conclusion

Among participatory methods that empower lay audiences to gain an insight on science, to form and express opinions on scientific applications and in general to participate to the discussion on sustainable development, we believe that youth science journalism represents an innovative and fruitful opportunity. Moreover, it has not to be underestimated that with the fast growing phenomena of social networks, media sharing

websites and citizens journalism, some sort of training in journalism for young people might in the future become not only desirable but necessary.

If some other youth journalism experiences can be found (e.g. see <http://youthjournalism.org/>), our impression is that these programmes have been less presented, discussed and evaluated in practitioners' or academics' contexts. While we plan to continue to work in this area, e.g. repeating the Science Reporter Summer Camp experience also in 2014, we hope to gather more data from our or others' projects, to improve the practice and promote a deeper reflection on the methods and the impacts of this approach.

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