

INSTEM 4th Newsletter



INSTEM INTRODUCES SIS CATALYST ...

A major goal of INSTEM is to ensure sustainable continuation of project activities and results. One way to achieve this is to inform about innovative teaching practices.

This newsletter draws attention to the outcome of the FP7 funded SiS Catalyst project. During a four year programme (2011-2014), *SiS Catalyst project: Children as Change Agents for the Future of Science in Society* – enabled experts from various fields of science communication, education, university management, civil society and more, to consider the role of children and young people in the development of Science in Society – and how science organisations can better engage with young people, both on a practical and a strategic level.

We hope you enjoy reading this, discovering and understanding things you didn't know.

Katja Maaß & Jacqueline Passon

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SIS CATALYST ...

... SiS Catalyst was the first “mobilisation and mutual learning action plan” in the area of education supported by the European Commission under FP7. Its aim was to encourage the engagement of

universities and other science organisations of various kinds, to recognise children and young people as a relevant dialogue group – irrespective of their social origin or educational achievements – and to build capacity around this important concern.



"SiS Catalyst was based on a very simple idea ... that as children are the future, we must involve them in the decisions of today."



Tricia Jenkins MBE

THE AIM ...

... of the project was to explore the embedding of Children's University type activities within institutional policies and practices. The European Children's Universities Network [EUCU.NET] as a platform of members from over 40 countries was an important partner in the development and dissemination of the results of the SiS Catalyst. For more information on Children's Universities please go to <http://eucu.net/video> (in English, Spanish, Polish, German and French with Chinese, Portuguese, Italian and Turkish in preparation.)

CHILDREN AS CHANGE AGENTS FOR SCIENCE AND SOCIETY

Tricia Jenkins

Our learning journey

In the words of the Principal Investigator, Tricia Jenkins: SiS Catalyst was an extraordinary opportunity for a group of us from around the world to embark on a learning journey together. At the start of our journey, we ambitiously set ourselves the task of seeking to identify how children could be catalysts for change in the long-term solutions to the grand challenges faced by society.

In 2009, when we began our SiS Catalyst journey, the expression Science in Society was being used, however the phrase Science With and For Society has now been adopted by the European Commission. This transition of thinking has been a fundamental aspect of the SiS Catalyst learning and is also directly linked to the concept of Responsible Research and Innovation. This concept requires that societal actors work together during the whole research and innovation process to ensure that research and innovation policy is driven by the needs of society. In SiS Catalyst we combined the three agendas of science communication, social inclusion and children as change agents and together they make an element of the Science With and For Society agenda.

When we reflected on our journey together we recognised that we had all started from very different locations as a consequence of our unique personal histories - which together made up a complex weave of different languages, cultures, ages and experiences, organisations and countries etc. However during our time together we were enabled to collectively see the 'big picture' and that the distance between our initial

starting point and our conclusions represents the learning of SiS Catalyst and is a composite of our individual learning.

Our three starting points were:

- The science communication agenda - promoting the uptake and interest in science subjects
- The social inclusion agenda - educational opportunities for under-represented groups
- Young people as change agents - enabling institutional change

We felt we learnt much but with two especially important points to emphasise:

First, that we must recognise children and young people as ‘societal actors’. By this we mean that we must include children in the development of both science and society. It is their future that we are creating now, therefore we must recognise children and young people as stakeholders and work with them to create our shared future.

In the words of children of Medellin, Colombia (We All Can Change the World Children’s Manifesto, April 2014): *We are the ones that will live our future, that's why we don't want adults to take decisions without taking us into account.*

Second, in order for science/scientists to have a sustained and effective two-way dialogue with society (children and young people) the process must be one which empowers all stakeholders. This means that the concept of children as change agents requires processes that are transparent, accessible and ethical.

If we are going to engage with children as societal actors, then the processes involved must enable the children and young people to be empowered, to feel respected and confident in their own ability to make choices and decisions.

Children intuitively think without judgement, with curiosity, ethically and authentically. Listening to children is thus the quickest way for us to learn to think differently. As adults we must try to remember what it is like to think like a child, free from the judgements that we have absorbed throughout our lifetime.

We also recommend seven specific actions:

1. Before it is delivered in the classroom all curriculum must be subject to a process of engagement and consultation with children and young people.
2. Teachers and those working directly with children and young people must be given support to engage in a way that is empowering, such as through appropriate training and resources.
3. Consultation events such as the ‘What We Recommend’ workshops developed through SiS Catalyst should be a mandatory element of public policy design processes.
4. Public funding for learning and teaching should take account of the social background of students and promote greater equity and diversity.
5. Governments must invest in both formal and informal learning to foster self-belief and resilience in children and young people.
6. Governments and public institutions must adopt ‘children as change agents’ strategies to enable dialogue with children and young people.
7. ‘Key players’ must be given support and opportunities to develop their capacity to enhance the role of children as change agents, for example through national and international networks.

The SiS Catalyst book

SiS Catalyst produced a book entitled 'Children As Change Agents for Science and Society' outlining a radical new educational agenda which places children at the centre of how we meet the challenges of the 21st century. It draws upon the achievements of SiS Catalyst and was launched in the House of Lords, London in February 2015. Contained within the book are descriptions of the twelve Responsible Research and Innovation tools which were developed by the SiS Catalyst consortium. These tools, and the book itself are available on the SiS Catalyst website. <http://www.siscatalyst.eu>

This book offers the beginning of the creation of a new roadmap for science with and for society by the simple act of recognising children as societal actors. The landscape of public engagement has now changed as a consequence of children being recognised as a 'public' in their own right. It also questions the role of higher education in this new landscape; how can universities be catalysts for the sustainable development that our world so urgently needs. The SiS Catalyst travellers propose that Children's University type activities have the potential to become the bridge for academics not just to work with children but also to co-create knowledge with them.

This is a radical dialogue, which will require humility and openness within the higher education sector and a genuine desire to embrace change. However the third message that the SiS Catalyst travellers brought back with them is the very positive message, that not only must we change, we can change!

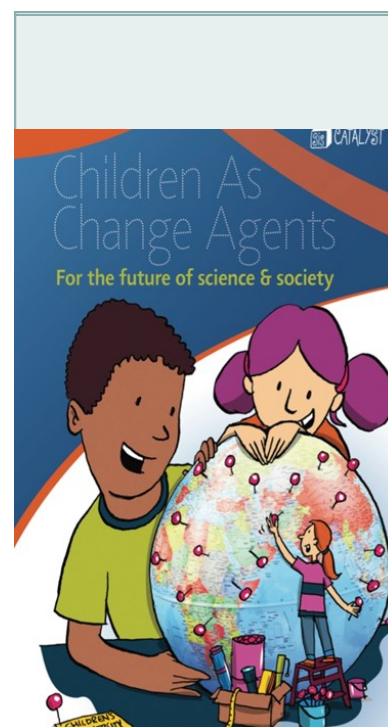
Responsible Research and Innovation Tools E-learning Courses

Three e-learning courses were produced on topics aimed to address the key areas and audience for the SiS Catalyst project. The aim was also to reach the wider audience within the education community.

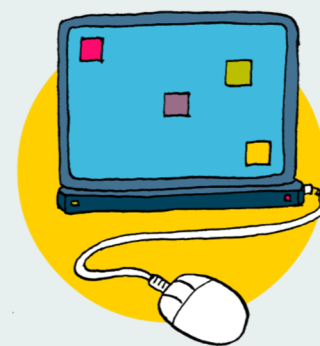
Many organisations working to engage children in new and challenging ways face their own challenges, often in maximising impact with limited resources. How they manage the information and knowledge they have within the organisation is crucial. Capacity building offers interactive tools that organisations can apply to their own contexts to enable them to build their capacity for change.

Working Ethically helps organisations and practitioners to develop ways of embedding ethical practice into the fabric of their work with children. In particular, it looks to help them navigate that line between protectionism and paternalism. How can we be mindful of the vulnerabilities of children, yet at the same time look to empower them?

Developing Creative Websites for Children covers the state of the art analysis in the field of web site development for children. Users can find useful and practical tips and examples of best practices,



The SiS Catalyst Handbook.



taking into account the very different preferences, abilities, capacities to manage information, needs, interests and searching habits as well as with cognitive and motor skills of children compared to adults.

You can access these courses at: <http://siscatalyst.eu/elearning-courses>

Peer mentoring

Harnessing the power of the networks is what will take the children as change agency movement forward beyond the SiS Catalyst project. Peer mentoring was the method by which this power was utilised to both extend and enrich the network under SiS Catalyst, as well as perhaps the major vehicle for innovation in the project. Peer mentoring on a global scale is a very powerful action. It enables partners to explore the work implemented by their peer in a different region, country and culture. Through the peer mentoring exchanges a pair of associates meets at each other's institution to learn from the 'Other', and reflect upon the 'Self'. The Mentoring Associate programme enabled a group of 36 science organisations, universities, museums and other intermediaries in science communication to learn from each other across the whole terrain of the children as change agency ecosystem covering: governance and strategic alignment, programme development and social inclusion.



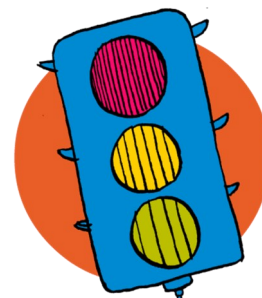
We have used our own Mentoring Associates programme as a case study to inform guidelines for organisations hoping to facilitate peer mentoring in their own context.

You can view the guidelines here: <http://siscatalyst.eu/peer-mentoring>

The Diversity & Inclusion map

The Diversity & Inclusion map is a self-assessment tool for organisations and practitioners who are involved in science engagement programmes with children. It aims to assist organisations in refining and improving the essential aspects of their work:

- the impact they aim to achieve;
- the strategic embedding of programmes and their sustainability;
- cooperation, networking and communication skills;
- engagement with target groups and inclusiveness;
- evaluation and monitoring efforts.



The map is based on a four-stage model:

Stage 1: Assess impact through the self-assessment questionnaire.

Stage 2: Reflect on the results and use the benchmarking tool to enable an in-depth comparison with other programmes and organisations across the EU

Stage 3: Translate, prioritise and put what had been learnt into action using the planning tool and a self-support manual which contains a range of tips and tricks and references to interesting literature with regard to creating a safer and more inclusive environment for children and staff.

Stage 4: Embed evaluation of the changes implemented as part of the self-assessment process. The Diversity and Inclusion Map includes examples of evaluation tools that can be used at this point.

DIGITAL LITERACY... OPENING DOORS TO LEARNING ANYTIME, ANYWHERE

All children deserve safe access to technologies.
Read and sign our declarations here:
www.siscatalyst.eu/policy-makers/declarations

"Listening to, and empowering young people is a duty when developing science for and with young people. However it is also an opportunity."

How to Listen to and Empower Children

Listening to, and empowering young people is a duty when developing science for and with young people. However it is also an opportunity. This is a key idea in the children as change agency model. Building ways to engage children in different ways is a responsibility, both in the context of legal frameworks, such as the United Nations Convention on the Rights of the Child Article 12, and if we are to meet the global challenges of the 21st century outlined above. It is also, a way in which professionals working with children empower themselves in their own work.

We produced a guide targeted in particular at three categories of professionals who are 'the change makers' on the day to day level:

- organisers of science in society activities
- facilitators of science in society activities
- scientists involved in science in society activities

It has four modules:

Module 1: From science to empowerment

Communicating in science is a matter of recreating a meaning for scientific knowledge in a context different from the one in which it was produced. This module contains exercises and principles to support scientists in communicating with children in empowering and engaging ways.

Module 2: From engagement to governance

Educators, museum explainers, teachers... are “listening to” the children all the time. It is a different challenge to include children in the governance of a project or enable them to contribute meaningfully to the decisions regarding an institution’s life. This module looks at methods of integrating children into how organisations are managed and led.

Module 3: Evaluating participation

Self-reflection is the core of change-agency work.

Module 4: The Dialogical approach

Underpinning the practical techniques to listen and empower children there has to be a philosophical base. This module is based on Paulo Freire’s ideas of education in which teacher and student are subject of the action of learning. It consists of a set of exercises which deconstruct some of the deep-rooted assumptions regarding the teacher:student relationship. This process encourages practitioners to question what education is, and encourages them to see it as a process of collective and continuous formation.

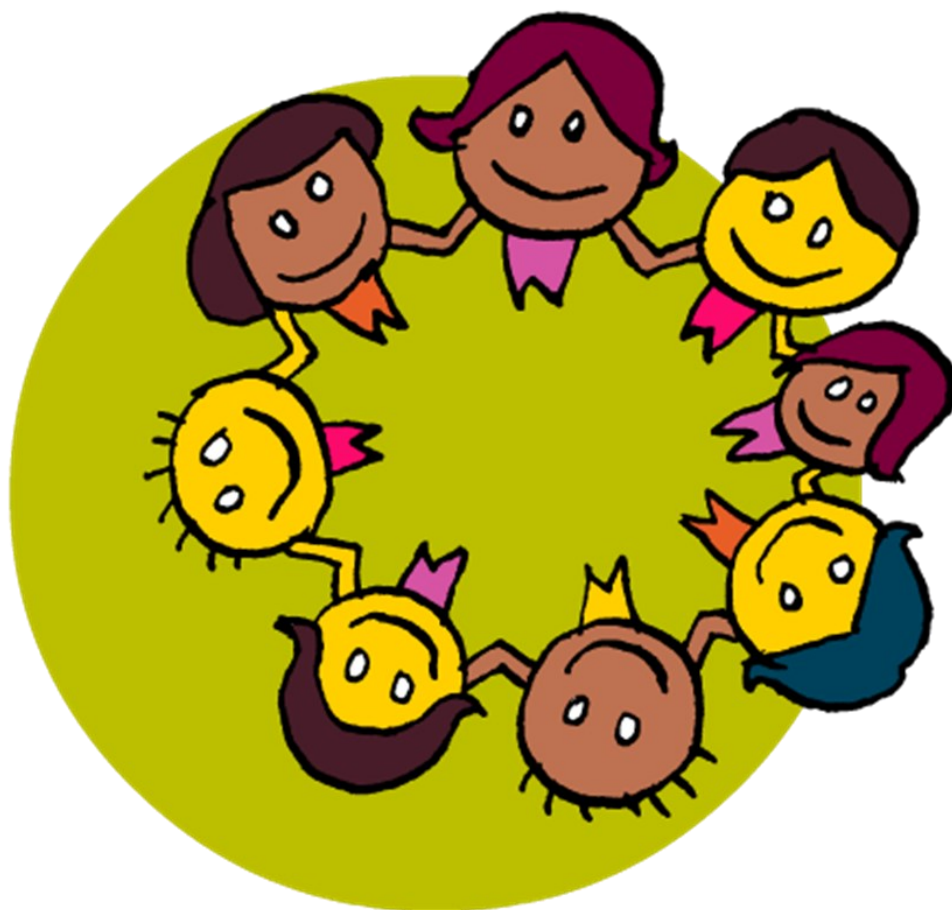
The contribution of the SiS Catalyst project here is not to offer a rigid blueprint of training modules that should be replicated the world over. It is to present a set of flexible tools that practitioners in different contexts and countries can draw upon in their own way to support their own change journey, and that of the students they work with.

View the guide: <http://siscatalyst.eu/listen-empower>

Engaging students

Student engagement is a vital part of the change agency ecosystem. When students become involved in science communication projects it is a win-win situation, where all participants involved gain from the experience. The students themselves gain vital experience, skills and networks, all essential additions to their CV. The young people will meet role models, interacting with people who are generational go-betweens, and the project benefits from the wealth of knowledge and energy the students can bring, whilst also being able to give an accurate picture of what higher education is at this exact moment. SiS Catalyst made it possible for twelve students to work on eight projects around the world.

Several key points to orientate this work in the future emerged from the SiS Catalyst experience, which have been compiled into a set of guidelines for internship hosts. Originally developed as a pilot activity over the course of SiS Catalyst, ‘What is Science?’ is a self-contained workshop project, designed to be easily set up by any institution or organisation that works with students. It does not require much in the way of resources and can be delivered to any number of primary schools. It is a project that allows students to get involved as much or as little as their time and inclination allows, whilst still delivering a high impact workshop to the 10-12 year olds it is aimed at.



"The most powerful mechanism by which children can be empowered is by enabling their voice to influence the policies and activities that affect them."

What We Recommend Workshops

The most powerful mechanism by which children can be empowered is by enabling their voice to influence the policies and activities that affect them. This means going beyond working with practitioners to change how they work with children or formulating views on their behalf.

The SiS Catalyst Project designed and implemented a series of workshops held in 20 different countries during 2014. What We Recommend: The voices and opinions of young people provided the opportunity for groups of 10 to 16-year-olds to reflect on education and to make recommendations on different aspects of Science and Society and access to knowledge. The What We Recommend workshops enabled the young people to consider and learn about their own decision-making. Young people were able to gain a greater understanding regarding their choice of options, and to develop a deeper comprehension about choices that they are making in their own lives both now and in the future.

Following on from this successful workshop series, a guidebook was created to encourage and allow others to host their own events.

You can view it here: <http://siscatalyst.eu/WWR>

The AHA Album

A basic objective in the SiS Catalyst project was to encourage more science and research organisations to recognise young people as a group with whom you can, and should, have dialogue with. Fundamental to this is equipping young people to be able not just to articulate their experiences through mechanisms such as bespoke sessions like What We Recommend, but to capture these throughout the learning journey. Tools are needed that enable young people to build their own narrative of success that then gives substance to the dialogue they can then have with institutions. Such tools should recognise individual developments and in particular 'non-formal' learning experiences.



The 'AHA Album' is an eye-catching booklet suitable for children aged 7-13 years. It aims to capture those 'Aha' moments when children realise change in both what they understand and what they know. They are also able to describe the actors, institutions or environments that helped create these moments through their learning journey.

Children are encouraged to share this information with peers, relatives and those organising the programmes. This can be done either in a direct and personal way by exchanging the gathered information and/or passing back the entire album to the issuing organisation. A website has been built where these 'Aha' moments are captured, contributing to the development of the collective narrative of children-led change.

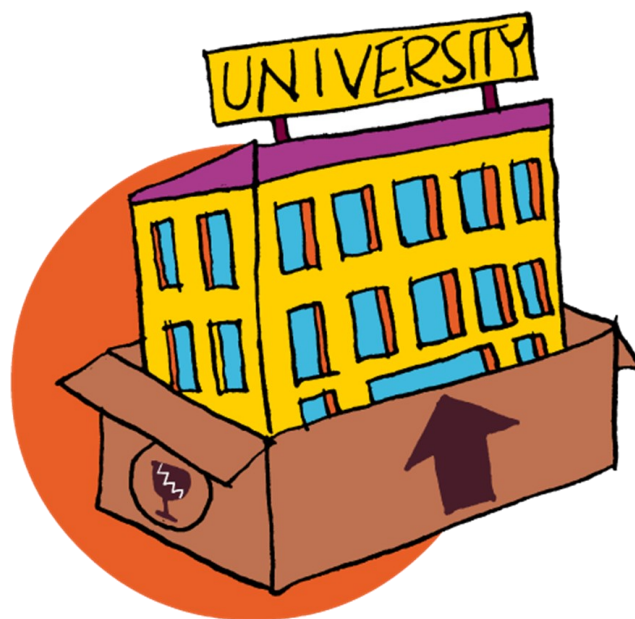
You can find more information here: <http://siscatalyst.eu/aha>

Change in Action – the Catalyst Case Studies

The core of the SiS Catalyst project was the different 'case studies' of children as change agency in action. These eight projects acted as pilot studies of how to take work with children in different and contrasting ways.

There were a series of messages for policy-makers coming out of the Change in Action part of the SiS Catalyst project:

- Create critical mass if you want innovation and learning to occur.





CASE STUDIES OF MUTUAL LEARNING

- Embrace diversity in how learning is delivered. The aim is not to find ‘the best’ programme. There will not be one optimum approach.
- Incentivise partnership between government funded agencies (in particular schools) and those working in change agency. The better outcomes from this aspect of the Catalyst project came from new partnerships across sectors.
- Accept unexpected outcomes. Some of the most positive changes were ones that the organisations did not expect.
- Finally, recognise the extent of challenge. In the case of the SiS Catalyst project most of the organisations attempted to reach out to new groups of learners: which in the majority of cases meant those from groups experiencing some form of social marginalisation. If a project/ organisation is not explicitly created to target such groups then to do so is a major challenge. As several recognised here, organisations need to do different things, not just deliver their existing programmes differently.

There is a very powerful message emerging from the core of the Catalyst project: If you create space in which children as change agency organisations can innovate and the support to help them do so, then they can change what they do, how they do it and who benefits.

View the case studies here: <http://siscatalyst.eu/case-studies>

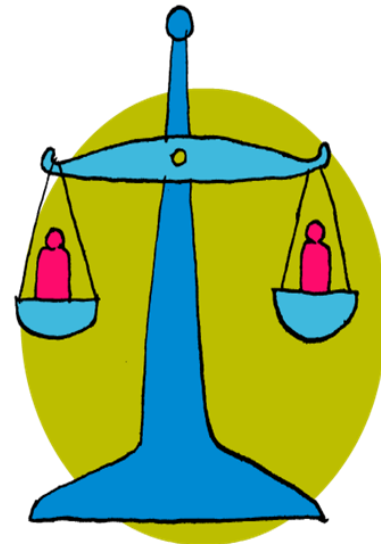
Working Ethically

At both the philosophical and practical level children as change agency looks to embed an ethical radar into the work. The question of the purposes of education and the very society that we wish to build through it are ethical ones. Is it right to try and prepare children for a society that is unsustainable and a future that they have to inhabit but cannot shape? Attempting to place children as societal actors rather than societal subjects, is itself an ethical decision which carries with it a vision of the good or just society.

The SiS Catalyst Project created a space where practitioners were able to develop their own visions for education, and use the frame of ethical consideration to help them do this. In itself this is a message coming from the project. While practitioners may focus their energies on delivering activities for children, they are not and should not be divorced from the broader issues that shape their everyday work. They need the space to be able to connect this work with such issues for it to have meaning to children and themselves.

Working ethically is not just an issue of reflection, it can permeate throughout the day to day decisions of those working with young people. The SiS Catalyst project developed two brief guides and an e-learning course to assist in this endeavour. They are suitably generic to apply across contexts.

View them here: <http://siscatalyst.eu/ethics>



CATALYSTS FOR CHANGE IN SCIENCE WITH AND FOR SOCIETY

The socio-political dimensions of engagement
programmes for children and young people.
A Declaration Framework.

eucunet

SiS CATALYST

7
L'UNIVERSITÉ EUROPEENNE
DES SCIENCES

"Listening to, and empowering young people is a duty when developing science for and with young people. However it is also an opportunity."

The SiS Declarations Booklet

Essential to advocating for change is developing techniques to distill the views of the community or group into succinct messages for policymakers that include clear messages of what needs to be done, and how, with realistic, achievable ways of realising change. The SiS catalyst approach was to develop a series of 'declarations' via different consultative techniques, which we refined and linked to four conferences.

The declarations were intended to support and be one element within a "pan-European mutual agreement process" and a vehicle to foster a common understanding of children as partners in the development of policies at the European Level.

All declarations were placed online for sharing and endorsing– either as an individual, or as an institution. It was difficult to get as broad an ownership of the declarations as hoped. Practitioners may not be authorised to speak on behalf of an institution, whilst University managers and other decision/policy makers can doubt the value of just endorsing a declaration. These challenges show again that achieving change requires coordinated effort across a range of areas. Practitioners and managers both

need other forms of support and engagement alongside something like the declarations to give them the legitimacy to endorse them.

The SiS catalyst experience provides important pointers to the need to address this challenge despite the difficulties associated with it. The power of belief in the rights of children and the imperative of overcoming social injustice provides the energy that drives forward those across the world who subscribe to the change agency agenda. However, this belief is not shared by everyone. There has to be ways of engaging those who have not 'bought in' to the agenda. The declaration approach is one way of trying to do this, whilst at the same time as the Catalyst experience has shown strengthening practice.

You can read more about the declarations here: <http://siscatalyst.eu/declarations>

Academic Book

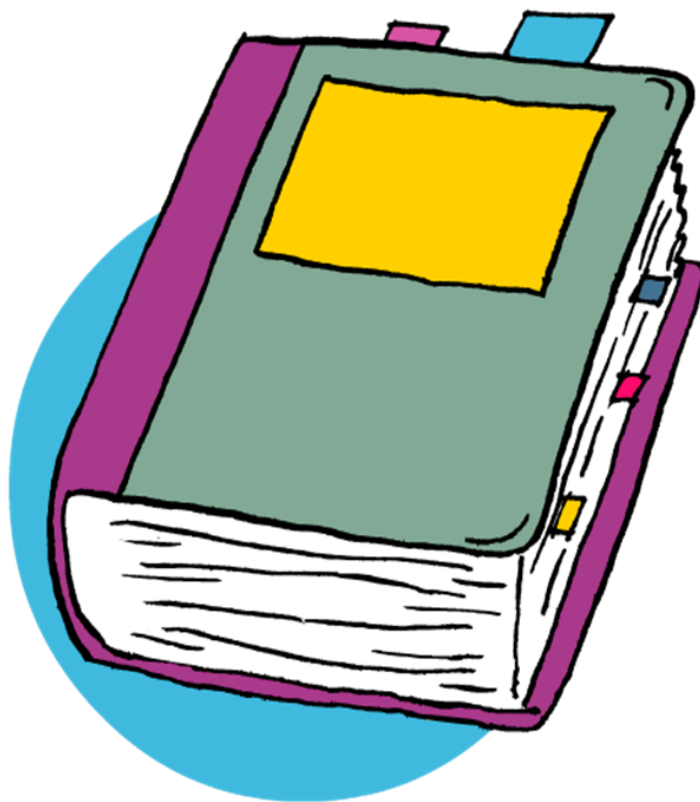
Crossing science in society and social inclusion agendas: Engaging the academic community

Engagement with the academic community is a fundamental part of engaging children in the processes of change. While there may be some dispute regarding the extent to which academics, particularly in the field of science, are themselves marginalised from the policy process, they remain the architects of the evidence base and the shapers of knowledge. While it differs much across countries (and within them) they also retain significant autonomy within higher

education enabling them to structure how HE engages with all young people, and particularly those from under-represented groups.

The SiS Catalyst project from the outset ensured that the academic community was part of the change ecosystem. The project produced a series of academic papers and a collection of these will be published in 2015. 'Listening and Empowering: Crossing the social inclusion and the science in society agenda in science communication activities involving children and young people', confronts some of the assumptions embedded in the relationship that children have with science and those who communicate it. It argues that while children are one of the main target groups for the communication of science, they are positioned as recipients of knowledge excluded from the dialogic approach that aims to ensure that scientists listen and have a dialogue with the public, or excluded altogether from science by their economic or social backgrounds.

It brings together examples of how to confront this exclusion by providing spaces where dialogue with children can be developed, and how these spaces can be used to open up the potential for institutional changes.



<http://siscatalyst.eu/crossing-agendas>

Convincing Policy Makers

The children as change agents agenda is an unashamedly ambitious one. It requires fundamental change, not the tinkering around at the edges that characterises much of what passes for educational reform. But to achieve this change takes a whole series of smaller steps. There is no big bang solution. The SiS Catalyst policy seminar series was an attempt to develop a model that could move us along the road of change. The aim was to bring policy makers together with a range of other stakeholders to develop a shared agenda. The thread running through the ecosystem that SiS Catalyst laid the foundations for was that impact can only be achieved collectively and this requires a shared agenda to work from. The policy seminars were an explicit attempt to build this agenda at the strategic level.

SiS Catalyst delivered policy seminars in eight different countries testing different ways to bring stakeholders together, in particular implementing seminars as stand-alone events or as an annex to other bigger events. Using this experience, a set of guidelines was produced to aid others in planning, implementing and evaluating their own policy seminars.

Read the guidelines here: <http://siscatalyst.eu/policy>

"The children as change agents agenda is an unashamedly ambitious one. It requires fundamental change, not the tinkering around at the edges that characterises much of what passes for educational reform."



All of these responsible Research and Innovation tools are available on <http://www.siscatalyst.eu>

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