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POLICY BRIEFS

Introduction

This document includes three Policy Briefs that gather scientific evidence informing policy gathered through the H2020 project ALLINTERACT. The aim of this project is to widen and diversify citizen engagement in science, with a focus on gender and education. ALLINTERACT understands citizens' engagement in science not only in terms of participation in research, but also in the identification of the topics in which research is needed (relevance) and in the evaluation of the social impact of the research outcomes¹.

Each policy brief focuses on a particular set of scientific evidence to guide policymaking:

- The first policy brief presents key aspects to take into account to promote citizen engagement in science when developing policies for social impact.
- The second policy brief describes a series of awareness-raising actions that encourage citizen participation in research that have been implemented within the ALLINTERACT project. Their translation into policy and practice and potential replicability have been analysed.
- The third policy brief presents two Scientific Evidence Platforms created in the framework of ALLINTERACT as a tool for co-creation that engage citizens in debates with political and social impacts.

¹ Soler-Gallart, M., & Flecha, R. (2022). Researchers' Perceptions About Methodological Innovations in Research Oriented to Social Impact: Citizen Evaluation of Social Impact. *International Journal of Qualitative Methods*, 21, 16094069211067654. <https://doi.org/10.1177/16094069211067654>



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POLICY BRIEF I

Policies based on research with social impact achieve higher social impact.

Objective

Extant literature on citizen science shows that citizen participation leads to multiple benefits for both citizens and the scientific community. Through their participation in science, citizens can improve their scientific literacy (Bonney et al., 2016), advancing their knowledge of everyday topics by introducing scientific evidence to their understanding of a particular reality and contributing to the development of scientific skills such as critical thinking. Moreover, the participation of citizens in science, when done on an egalitarian basis, allows the elimination of the hierarchical gap between citizens and scientists, with scientists contributing scientific evidence and citizens contributing their views and experience on the topic being explored (Gómez et al., 2019).

Taking this into consideration, ALLINTERACT is built on the idea that when citizens become aware of the research that yielded the scientific advancements from which they benefit, their engagement in science increases. In turn, it contributes to aligning citizens' needs with scientific research: new possibilities for research based on the needs identified by citizens are opened, while the relevance and social impact of the scientific results are ensured. However, when not all social groups participate in science, the priorities and needs of those not represented are often neglected. This hinders not only the opportunity for certain social actors to benefit from the results of scientific research, but also from developing the scientific knowledge and skills that allows a deeper understanding of reality, and thus, making more informed decisions.

When fostering the engagement of citizens in science, policies and legislation can contribute to such a goal. *But why are some policies more effective? Which elements should policymakers take into account when developing such policies?* The following section addresses this issue.

Fostering Citizen Engagement in Science - Elements to take into account when developing policies for social impact

- **No reliance on so-called “experts”, but on scientific evidence with social impact**
Not all scientific evidence is the same. Some scientific research brings evidence of achieving social impact, while some other has never successfully transformed or improved a social reality. Even worse, some of such so-called “experts” often do not even refer to scientific evidence of any kind, but base their proposals on their own ideas and beliefs. This not only reduces the chances of success of their



proposal (there is no evidence that they will work), but also does not guarantee that they will cause no additional harm.

Thus, when policymakers rely on experts who do not work on the basis of research with social impact, it is more unlikely that the policies built on such knowledge achieve social impact. The opposite occurs when policies are built on the accumulation of scientific knowledge oriented towards social transformation. As an example through the literature review, ALLINTERACT has identified two pioneer legislations² which were grounded on years of scientific research in the line of the prevention of gender violence (Valls et al., 2016; Vidu, Puigvert, et al., 2021; Vidu, Tomás, et al., 2021). These policies are contributing to better protecting all citizens, specially gender violence victims, and they become an example of how policies based on scientific research with social impact better respond to the needs of citizens. In the Focus Groups, participants also reported that areas such as politics should rely on scientific evidence to address the current societal challenges. They acknowledge that when this happens, citizens are better equipped to make important decisions on their lives and the lives of their children and to advocate for themselves.

▪ **Incorporation of a bottom-up approach**

Policies with social impact are not only built top-down, but also consider the bottom-up. In this sense, they gather the voices and needs of the citizens that shall benefit from them. For instance, through the literature review on education, it has been identified that community-oriented policies often open up spaces that allow citizens to take part in co-creation processes. The Social Media Analysis, which allows capturing the voices of citizens in online debates, also led to the identification of posts aimed to raise awareness and promote political change at different levels, including topics such as energy consumption and the protection of the environment, policies for the promotion of higher education among migrants and minorities, policies addressing gender violence or for the inclusion of the LGBT community. In this vein, even though on Twitter most posts came from institutions, on Instagram all the identified posts on how citizens benefit from scientific research on education were citizen-led initiatives. On Facebook, examples of political impact included debates around press articles in which campaigns promoted by citizens and policymakers were discussed.

Another example is that of the scientific evidence platforms Sappho (gender) and Adhyayana (education)³. These open access platforms are a tool for citizens to find out which of the statements they hear in their daily lives on gender and education are hoaxes and which are based on scientific evidence. Citizens do not only share scientific evidence, but also their personal experience on the statements shared, which contributes to validate the scientific results and to open new avenues for research based on the needs identified by citizens.

▪ **Inclusion of all social groups**

Citizen participation in science has often counted on white participants, of higher than the average income and educational level (Paleco et al., 2021). When there is an imbalance in participation, the

²Organic Law 3/2007 for the effective equality of women and men March 22, 2007. BOE, 71. [Ley Orgánica 3/2007 para la igualdad efectiva de mujeres y Hombres. 22 de marzo de 2007. BOE, 71.]

<https://www.boe.es/eli/es/lo/2007/03/22/3/con>

Law 5/2008 on the right of women to eradicate gender-based violence. April 24, 2008. DOGC no. 5123 [Llei 5/2008 del dret de les dones a eradicar la violència masclista. 24 d'abril de 2008. DOGC núm. 5123]

<https://portaljuridic.gencat.cat/ca/document-del-pjur/?documentId=491383>

³ Sappho platform: <https://socialimpactscience.org/gender> // Adhyayana platform:

<https://socialimpactscience.org/gender>



priorities and needs of those participating in science have greater chances of being addressed than those from the groups who remain excluded. In this vein, many efforts have been made to broaden citizen participation in science. Indeed, the results from ALLINTERACT's survey point out that the most known initiatives by participants are those that target women in science (33.01%), while the least known are those that target LGBTI+ individuals (20.70%). This supports the evidence gathered in the literature review, which showed that many of the projects and actions identified as achieving social impact targeted a specific community/ social group⁴, especially in education.

Results from ALLINTERACT's survey also show that effective measures are still needed to ensure that the promotion of the participation of citizens in science materializes in real participation. Only 9.7% of the total of respondents had participated in actions for the recruitment of new talent in science. However, in vulnerable groups (e.g., low socioeconomic background, ethnic and religious minorities, women, LGBTIQI), the proportion ranged from 8.49% to 36.33%, with percentages of 19,76% among youth 16-24 and 16,57% among youth 25-34.

- **Aiming for replicability & transferability**

In order to promote citizen engagement in science, it is important to have policies to support those actions that have already proven to be successful in fostering such engagement. Examples of this were found in the Social Media Analytics task, through which posts containing evidence of real political impact of research were detected. These were focused on the implementation of programmes and services that resulted from the transference of the results of scientific research to new contexts. An example can be found in the area of education, in which comments made by teachers were identified. In these, the educational staff shared how they had implemented specific educational actions following the recommendations from scientific research regarding teaching and learning in topics such as literacy or mathematics. In this way, policy-makers can provide the necessary support to replicate such actions and transfer them to new contexts in which the improvements they bring about are most needed. In this way policies can facilitate the scalability of the identified successful actions, so these reach new social actors that can benefit from them.

A successful example - White Book of the Inclusive Communication of Science

As an example of a policy-in-development that takes into account these four recommendations we can find the White for Inclusive Communication of Science for the Spanish government (FECYT, 2022). This white book presents those projects and initiatives in the areas of Gender and socio-cultural situation; Cultural groups and at risk of social exclusion; Disability, and LGTBI+ people that are already succeeding in engaging citizens in science. In all those projects citizens have active roles, and they have been identified after being signaled as relevant by citizens themselves. Moreover, the projects presented target vulnerable groups such as cultural minorities or people with disabilities. In this case, the projects and policies are not only made *for* them, from the bottom-up, but both *with* and *for* them. In this line, the successful projects identified count on the participation of the vulnerable communities which contributes not only to ensuring that the end-

⁴ See ALLINTERACT's Report 1 - "How social actors benefit from the social impact of scientific research in gender and education"



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products fit the needs of such communities, but also to transforming participants into active social actors in the co-creation of knowledge and its dissemination in the target groups.

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POLICY BRIEF II

Awareness-raising actions that encourage citizen participation in research can be translated into policy and practice and replicated in new contexts.

Objective

Enhancing citizen participation in science that promote policies and practices with social impact would benefit from existing knowledge on actions that have been already been effective to achieve it. *How can citizen participation in scientific research be enhanced? Can it be translated into policy and practice? Can it be replicated in different contexts?* As follows, evidence gathered by ALLINTERACT that responds to these issues is presented.

Actions that encourage citizen participation in science

ALLINTERACT has found evidence of different awareness-raising actions that encourage citizen participation in research with a social impact for its potential replication. Six awareness-raising actions (three in gender and three in education) have been identified and implemented. These actions are described as follows:

Actions on Gender:

- **Workshop on Equality, Diversity and Inclusion (EDI) in Research.** This action was implemented with women (including vulnerable women) from a women's group. The action replicated the Deliberative Exercise to Foster Public Engagement, which had been previously tested in the context of nanotechnology and achieved an impact on citizen engagement in scientific research (Jones et al., 2014). The workshop aimed to improve the quality and relevance of research to society. It counted with 25 participants and consisted of an introduction, active learning in five small groups with five participants and one facilitator, and knowledge sharing with all participants.
- **"Citizens, gender and science: topics for the future" program.** This action was implemented with members of an LGBTQI group. The action consisted of a five-sessions program in which participants could discuss the importance of Gender Studies, get in touch with academic and scientific papers related to this topic, and learn how to use some academic and scientific resources to search for information based on a topic of interest. Participants were able to interact and express their opinions on the topics covered in the sessions, while the moderator (a researcher) made sure to create an egalitarian and respectful participation and environment.
- **Science in the daily life: an interactive dialogue on gender, science and medicine.** This action was implemented with women (including young women) from a women's group. The action consisted of an



interactive workshop during which the participants interacted with a women scientist about scientific results on two main topics: “women and science” and “gender medicine”. The main goal was to increase the participants’ knowledge and interest in science by engaging them in a debate. The workshop included a brief presentation of the objective of the workshop, an interactive presentation of the topic by the scientist, a discussion and final conclusions. At the end of the workshop, participants were invited to read some articles linked to the topic.

Actions on Education:

- **Dialogic Scientific Gatherings (DSG).** DSG have already been identified as being successful at enhancing citizens' participation in scientific research by engaging different people in a wide variety of contexts in an egalitarian dialogue around scientific evidence (Buslón et al., 2020; Díez Palomar et al., 2022). This action was implemented with parents of schoolchildren with a low-middle socioeconomic background. Eleven sessions were conducted, each lasting 45-60 minutes, in which participants (between 5 and 12) read and debated scientific texts. Before each DSG session, the participants and the moderator read the agreed pages of the text and selected those paragraphs that were of their interest and that they would like to share. Each participant mentioned the page number and paragraph they had selected, read it and then shared their thoughts. The other participants could then intervene based on an egalitarian dialogue, this is, prioritizing the participation of those who had not yet spoken.
- **Equality Proofing the Curriculum.** The main objective of this action was to collaborate with teachers in exploring different ways to study the impact of specific curricular areas on equality. Based on the Equality Impact Assessments (EqIAs) (Salo et al., 2014), which are a systematic, evidence-based consideration of the impact of practice, decisions, and actions on groups of people with protected characteristics, the focus was to build on key principles of pedagogy by working with teachers on how to develop an Equality Impact Assessments (EqIA) in the curriculum they were teaching.
- **Engaging citizens with the use of ADAYAYANA platform.** This action was implemented with students. Three sessions were conducted each lasting 45-60 minutes in online mode. The participants engaged in scientific research using the ADAYAYANA platform⁵, an educational platform aimed at opening the scientific debate to the public, and read about/search for diverse topics.

Achieved social impact

The actions implemented have achieved the engagement of new social groups in science, including under-represented groups, such as women, LGBTQ people, young people, and ethnic minorities. The implementation of these six actions achieved diverse social impacts. The main social impacts achieved are:

- Participants gained more knowledge and awareness of scientific research on a variety of issues related to gender and education and demonstrated greater awareness of the social impact of scientific research, including in relation to their daily experiences and activities.

⁵ <https://socialimpactsience.org/education/>



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- They also gained more confidence and motivation when using scientific research, distinguishing between scientific evidence from non-evidence-based information, and introducing scientific research with their colleagues and friends.
- Furthermore, participants increased their awareness of the relevance of research to society as a whole, even in areas where particular groups have historically been underrepresented.
- Finally, the extent and/or quality of the participants' engagement in scientific research increased.

Facilitators to the successful translation of awareness-rising actions into policy and practice

Based on the experience of translating the identified awareness-raising actions into policy and practice, some facilitators for a successful translation were analysed, that can be used for uptake in policy making:

- *Engagement and co-design with stakeholders:* stakeholder engagement and co-design helped to ensure the relevance of the actions to policy and practice, as well as their impact after the end of the project.
- *Co-creation with diverse groups of the public:* co-creation with different groups of citizens (e.g. women, LGBTI+ people, and other under-represented groups), engaging in egalitarian dialogues, made them feel important and recognised and facilitated the translation of the actions into policy and practice.
- *Embedding social impact into actions:* all implemented actions were designed with the objective to achieve social impact. In this way, the actions encouraged the participants to seek ways to translate their knowledge and experiences gained in the actions into policy and practice.
- *Access to scientific evidence:* to have open access to scientific evidence through scientific evidence platforms facilitated the implementation of the actions and their translation into policy and practice.

Facilitators to the potential replicability of actions in new contexts

Additionally, facilitators to the potential replicability of the actions in new contexts were analysed:

- *Participant-centred approach to the actions:* efforts were made to explain scientific evidence in terms accessible to the lay participants. Several of the actions were co-created and co-designed together with future participants, taking into account their interests, needs and preferences.
- *Demonstrable social impact of the actions:* organisations and policy-makers seek to maximise the impact of awareness-rising actions. Demonstrating the social impact of these actions increases their potential to be replicated.
- *Discoverability of the actions:* increasing the visibility of the actions implemented is important to facilitate their replication. The project website, conferences, publications, social media and video-capsules have been ways to disseminate and share information about the implemented actions.
- *Engagement with stakeholders:* engagement with stakeholders from the academia, governments and organizations can enable replication in new contexts and with different publics.
- *Open sharing of data, methods, and materials:* open sharing of data, methods and materials with interested organisations can save time and effort, accelerate the implementation of the actions and enable their potential replication.



- *Staff expertise and skills in citizen engagement*: developing staff expertise and skills in citizen engagement –e.g., taking input from citizens into project design, communicating scientific concepts in an accessible manner, facilitating discussions with citizens, learning from citizens' lived experiences– can enable potential replication of actions seeking to enhance citizen engagement in science, especially of under-represented or vulnerable groups.
- *Supportive policy environment*: a supportive policy environment facilitates implementing the actions, especially with regard to citizen participation and equality. The actions' alignment with national policies facilitates that local decision-makers and professionals are interested in implementing the action.

Conclusions

Six awareness-raising actions have been identified and implemented in the framework of the ALLINTERACT project that managed to engage citizens in science, including target populations of under-represented groups, such as women, LGBTQ people, young people, and ethnic minorities, and demonstrated to achieve social impact. Furthermore, a series of facilitators to translate these awareness-raising actions into policy and practice and to replicate them in new contexts were identified. In conclusion, it is possible to identify and implement in new contexts evidence-based actions enhancing citizen participation in scientific research with social impact. A major opportunity for the future lies in scaling up successful actions to larger populations over time by embedding them in organisational policies and practices.

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POLICY BRIEF III

Scientific Evidence Platforms as a strategy to engage citizens in scientific debates with political and social impacts.

Objective

The idea of engaging people in science is not new, but many scientific activities still understand citizens' participation as a top-down strategy, mainly based on the idea of dissemination or knowledge transfer. The sustainable and effective development of citizen engagement in science needs to overcome both top-down and bottom-up approaches, and develop co-creation strategies that engage all actors and establish collaborative and dialogic relationships that lead to the joint creation of scientific knowledge with political and social impact (Flecha García, 2022). Citizen engagement in science can improve the relevance and effectiveness of research, the alignment with the needs, expectations, and values of society (European Union, 2020) and the translation into more effective actions and policies that bring social improvements.

Education and gender are two specific blind spots regarding both citizen interaction with scientific developments, and citizen motivation for engaging in science-related activities. *How can citizens be engaged in scientific debates on gender and education that can have potential political and social impacts? Which effective tools can be used to enhance awareness and engagement in scientific research in these areas? How can this citizen participation have a positive impact on policymaking?* ALLINTERACT has addressed these issues through the creation of two Scientific Evidence Platforms. This policy brief is oriented to inform policymakers about how these platforms have been successful actions in promoting citizen engagement in scientific research with political and social impact.

Scientific Evidence Platforms

Two Scientific Evidence Platforms were created in the framework of the Horizon 2020 project ALLINTERACT, which aim to engage all citizens in scientific research, including young people and groups traditionally excluded from science. [Adhyayana](#) is the Scientific Evidence Platform focused on education and contributes to the United Nations' 4th Sustainable Development Goal on Quality Education involving diverse cultures. [Sappho](#) is the Scientific Evidence Platform on gender and contributes to the 5th Sustainable Development Goal on Gender Equality. Adhyayana and Sappho are non-profit digital instruments with free open access available to everyone. Both platforms have been designed to facilitate any citizen to consult as well as to contribute to science. They are based on the principle that everyone has the right to know and participate in scientific evidence, which is recognized in Article 27 of the Universal Declaration of Human Rights.

Hoaxes or fake news hinder citizens' right to science as well as their freedom to choose what is best for their lives and those surrounding them. Research has highlighted public concern about the increase in false information, which is encouraging the denial of scientific evidence and could potentially be a threat to citizens



and democracies (Allcott et al., 2019). Research also shows that, on social media, hoaxes are shared much more than evidence-based information. However, ALLINTERACT researchers have shown that false information is tweeted more but retweeted less than scientific evidence or fact-checking tweets, while scientific evidence and fact-checking tweets capture more engagement than mere facts (Pulido et al., 2020). Taking this into account, Sappho and Adhyayana aim to provide people with a participatory science-based tool that would help them to distinguish between what is a science-based statement and what is a hoax on subjects related to education and gender.

Sappho and Adhyayana Scientific Evidence Platforms recognize as scientific evidence the contributions that have been validated by the international scientific community; specifically, the scientific articles that have been indexed in the main scientific databases –Journal Citation Report (JCR) or SCOPUS– are considered. Based on scientific evidence, each statement posted on the platforms is assigned a label: a) “Scientific evidence”: a statement that counts with enough evidence –at least three scientific articles published in journals indexed in JCR or Scopus–; b) “Hoax”: a statement that counts with evidence which supports that the statement is false –at least three scientific articles published in journals indexed in JCR or Scopus–; c) “Need more evidence”: statements that do not have enough scientific evidence available yet regarding the validity of the statement; d) “Controversy”: statements that count with both scientific articles that support and contradict the statement, and need further evidence to be provided. Thus, the platforms give users an idea of the strength of the existing evidence for each statement, provide specific sources of evidence, and can motivate the search for more information that serves to clarify the truth of a statement.

Scientific Evidence Platforms as a Tool for Co-creation with a dialogic basis

“Co-creation is already a criterion, and even a requirement, in scientific research programmes in all sciences” (Flecha, 2022, p. 10). Co-creation means that both researchers and citizens participate together to find new horizons for knowledge that respond to the challenges and needs of society.

The Adhyayana and Sappho platforms have been built with a co-creative approach that ensures that all people, including researchers, practitioners, and all citizens, have the option to consult as well as to contribute directly to science. Furthermore, both platforms constitute a space in which egalitarian dialogue is put into practice, and where people who had never participated in science, nor in the construction of scientific knowledge, can now do so. In this way, these platforms overcome the existing opposition between top-down and bottom-up approaches, in which the former lead to researchers making decisions without citizens’ voices, and the latter can lead to populism, as it lacks the basis of scientific evidence (Flecha, Duque & Soler, 2001). To enhance the co-creative and dialogic dimension of the platforms, not only knowledge obtained from scientific research can be shared; participants can also explain daily-life experiences related to the education and gender topics discussed. According to the principle of egalitarian dialogue, citizens’ participation is always based on validity claims (this is, claims related to scientific evidence and truth), and not on power interactions (i.e., claims based on imposition, status, etc.). In this regard, the categorization of a statement into evidence or hoax will not depend on the “expertise” of someone on the topic, but on the evidence that supports or not the statement, which can have been provided by diverse participants.



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The dialogic society (Flecha, 2022) allows the transformation of all social and interpersonal spheres into becoming more democratic and egalitarian. Science is one of those spheres, as well as policy-making, where dialogue is increasingly important to successfully address the challenges of current society. Through the platforms, knowledge is shared among different profiles of participants, and thus conclusions on the truth of each statement are co-created in dialogue. In this regard, the platforms can be used by policymakers to contrast or validate the existing scientific evidence about certain statements on education and gender that can guide policymaking.

Political and social impacts of the Scientific Evidence Platforms

The Scientific Evidence Platforms have achieved wide participation. More than 8.000 people from 250 different countries have already used them. On March 27th, 2023, the Final Conference of ALLINTERACT took place, and there, Stefaan Hemans, Director for Policy Strategy and Evaluation, D. G. on Education, Youth, Sport and Culture, European Commission, highlighted the great political (and social) impacts achieved by the project. Moreover, Hermans connected the achievement of these impacts to ALLINTERACT's dialogic approach that promotes democracy through the inclusion of the voices of all people and the very active engagement of citizens in science. Informing policy making by providing evidence of the political and social impacts achieved can contribute to replicating this active engagement within new social groups and beyond the end of the project.

▪ **Political impact**

An example of the political impact is the impact of Sappho related to Spanish government campaigns against love. A Social Media Analytics research (Pulido Rodriguez et al., 2021) conducted on Twitter has allowed us to see this impact. From 2015 to 2020, the hoax "love kills" was disseminated on Twitter by autonomic and national campaigns in Spain. This statement was contested on the Sappho platform through a post entitled "Love does not kill", published in September 2020. Through egalitarian dialogue based on the scientific evidence shared on the platform, it was clarified that there is strong evidence supporting that love does not kill and that, therefore, the statement "love kills" is a hoax with harmful consequences for the health and life of people. As a result of this, in 2023, no political campaigns against love have been found. This impact on politics has strong implications for future policy measures and will have a positive impact on the life of many people through more effective actions addressed to the prevention of violence, as scientific evidence shows that love can contribute to preventing gender violence.

A second example of political impact is related to the Society of Jesus (Jesuits), that have decided and taken action towards eliminating sexual abuse of children and adults in the Jesuits Global institution worldwide. This goal is being pursued using scientific evidence of social impact on gender. In this regard, the Society of Jesus is using the Sappho platform as a key resource for their worldwide strategy in their training.

▪ **Social impact**

Schools of primary and secondary education in different settings, including those located in low SES backgrounds, have used the platforms to engage in Dialogic Scientific Gatherings. For instance, many schools chose a post categorized as Scientific Evidence on Adhyayana about the importance and the benefits of friendship to overcome bullying. In the gatherings, students shared their own reflections and arguments on the need for friendships to improve their lives, including the prevention of bullying.



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Other examples of social impact include students from vulnerable groups who are using the platforms to do homework and learn, and by doing this, are becoming ambassadors for science communication. A Roma girl who participated in the ALLINTERACT Final Conference explained how she used the Adhyayana Platform to challenge the hoax that Roma people are not interested in education, adding in her own explanation “It is not me the one who is saying this, it’s science, go and look it yourself”. In other schools, the platforms are used as the basis for their teachers’ training, and even as a resource for parents –especially from ethnic minorities or low SES backgrounds– to get to know scientific evidence on how to improve their children’s education, for instance on how to act in the face of violence or bullying against children.

The dialogic exchange of scientific content facilitated by the Scientific Evidence Platforms has also inspired the creation of materials to prevent bullying in schools. A Science Game Jam was organised in the framework of ALLINTERACT, where different children and adults participated in the co-creation of “BE BRAVE”, the first videogame to help children distinguish scientific evidence from hoaxes on bullying. Although it has been recently launched, in its beta version many children who have already played the video game are enjoying it and learning how they should act according to scientific evidence of social impact when witnessing or suffering bullying.

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