

SPANISH KIKS

DISSEMINATION



16th – July – 2018

Santander, Cantabria (Spain)

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1. Introduction

The Spanish team has broadly disseminated the KIKS project in Spain by means of different approaches. We have, for instance, established contacts and collaborations with STEM-related organisations, institutions and associations to make our own project more visible (§2). We have organised (and participated in) several face to face events to promote the project and to make it better known. We have also attended a large number of conferences and seminars where we have presented it (§3). We have published academic papers in different books and journals describing the project and its impact in the Spanish schools (§4). The project was also meaningfully advertised in different media including television, radio and print media (§5).

2. Organisations and institutions from which we have become more visible

To maximise the impact, dissemination and sustainability, our approach was to embed our project into existing mainstream initiatives. We have for example embedded KIKS in national, long-term organisations, associations and other STEM-related projects to promoted KIKS through their websites. Below we describe some of these organisations and our relation/collaboration with them.

TESELA GROUP OF INNOVATION IN MATHEMATICAL EDUCATION (UNIVERSITY OF SANTIAGO)

The TESELA Group is a non-profit organization based at University of Santiago de Compostela Spain. TESELA collaborates with the Galician Institute for management of the Third Sector (IGAXES3) in Mathematical Education stimulation programs that take place out of the school schedule. It is **addressed towards teenagers at risk of social exclusion** and it is meant to be expanded towards the lasts years of primary school (in the Spanish education system that is children between 10 and 12 years old). The two programs that they are implementing are: (A) “Matemáticas de verano” (Summer Mathematics) and (B) Matemociones (Mathemotions). TESELA also collaborates with several schools in Galicia, as for example the CEIP Apóstol Santiago and the CEIP Vite I, undertaken extra-curricular activities as for instance the Science week. Apart from the above, TESELA collaborates with the Galician Association of Mathematics Teachers in two contests: The Rebumbio Matemático for 6th grade of Primary School and the Mathematical Olympiad for 2nd grade of Secondary Schools.

The Spanish KIKS partners have collaborated intensively with the TESELA groups organising STEAM events and training their volunteers on the elaboration and implementation of KIKS activities.

STEMFOR YOUTH H2020 PROJECT

We have closely collaborated with STEMforYouth project, sharing ideas, information and also organising STEM events for secondary education students. STEMforYouth is a project funded under European



Union's Horizon 2020 research and innovation programme, and formed by 10 institutions across seven different countries including Slovenia, Italy, Greece, Spain, Poland, and Czech Republic. The main objective of the project is to raise the interest of young people between 12 and 19 years old for STEM fields (Science, Technology, Engineering and Mathematics). To do this, seven STEM areas have been selected (Mathematics, Physics, Chemistry, Medicine, Astronomy, Engineering and Citizen Science). Further information about the project can be found at the following website (<https://stemforyouth.unican.es/>) where they also advertise our KIKS project.

EUROPEAN RESEARCHERS NIGHT (UNIVERSITIES & EUROPEAN UNION)

European Researchers Night organise Europe-wide public events dedicated to popular science and fun learning. It takes place each year on the last Friday in September. More than 30 countries and over 300 cities are involved.

The events showcase what researchers really do for society, in interactive and engaging ways, and promote research careers to young people and their parents.

It is funded by the European Union. Funding covers any expenses linked to the organisation of a research outreach event. It can be spent on preparations and publicity, the event itself and assessment of its impact. Activities that can be supported include:

- hands-on experiments conducted by researchers
- science shows with public participation
- debates
- "researchers' dating"(meet a researcher and ask them questions)
- competitions (science quizzes, games, puzzles, photo and art contests, etc)
- workshops for children
- guided visits of labs, research institutes, and other relevant places that are usually closed to the public

The Spanish KIKS, and in particular the different student teams, has participated in the European Researchers Night 2017, see more information [here](#).



SPANISH FEDERATION OF MATHEMATICS TEACHERS

The Spanish Federation of Mathematics Teachers (known by its Spanish acronym FESPM) is a non-profit organization that integrates all associations of mathematics teachers in Spain. It accounts with more than 20 Spanish mathematics teacher associations and 6.000 members. The Spanish Federation of Mathematics Teachers aims to promote the teaching and learning of mathematics organizing national and international events, and providing teachers with the necessary support and tools to reach a high level of teaching. Further information on: <http://www.fespm.es/>.



Spanish KIKS partners have closely collaborated with FESPM, organizing different talks about KIKS and the teaching and learning of STEAM areas (e.g. [BBC: Bit at CIEM](#)).

UNIDAD DE CULTURA CIENTÍFICA Y DE LA INNOVACIÓN (UNIVERSITY OF CANTABRIA)

The Unidad de Cultura Científica y de la Innovación (UCC+I) is a unit created in 2015 whose main objective is to enhance the communication and dissemination of research developed at University of Cantabria. UCC + I has the support and endorsement of the Spanish Foundation for Science and Technology (FECYT). In this way, the University of Cantabria has joined as a member accredited by FECYT, the Network of Units of Scientific Culture and Innovation (Red UCC + i). See further information [here](#). The KIKS Spanish members have closely collaborated with UCC + I, mainly to spread and give visibility to our project (e.g. see [here](#)).

3. High Visibility Physical Events

The Spanish KIKS has participated in different events both to disseminate the project and to promote students' learning through STEAM-projects' presentations. In particular, our student teams have participated in different sciences festivals, and teacher's conferences, to present their projects (§3.1), and the Spanish KIKS members and researchers have participated in different educational conferences and seminars to promote the project (§3.2).

3.1 Student Local Events

Below we list and describe some of the events in which the Spanish student teams have presented their projects.

SCIENCE WEEK AT UNIVERSITY OF CANTABRIA



KIKS participated in the Science Week organised by the University of Cantabria. This is a scientific event with different talks and workshops about sciences and mathematics. Some KIKS teams from Cantabria (e.g. Lope de Vega School and San José School) presented the following activities: Dark Camera, Golden Ratio, The Memory and LED Focus Light. The event took place at Faculty of Science on 17th of November 2016 and it was the kick off of the collaborations between different teams. See all the information [here](#).

CASTRO URDIALES INTERNATIONAL MEETING

The Spanish KIKS partner invited the Spanish schools to present their projects to the participants of [3rd KIKS International Meeting](#), held in Castro Urdiales, Cantabria, Spain. Several schools included the 'IES Vega de Toranzo', 'Sanchez Cantón', and 'Juan de Lunaza' participated in the event. The students presented their activities to the international KIKS committee of experts and shared ideas for new projects. 'The Memory', 'The Wireless Telegraph' and 'The Dark Camera' were some of the activities presented by the students. Further information about the presentations can be found at [here](#).



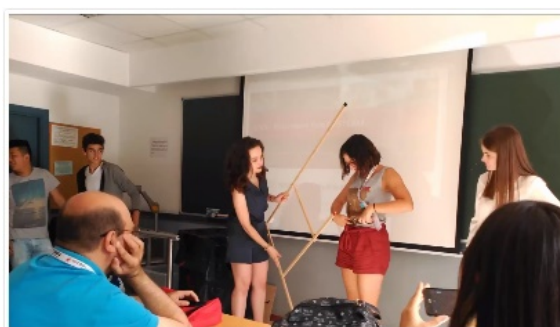
THE SCIENCE IN THE SCHOOL



KIKS schools participated at [The First Educational Meeting: Science in the School](#) organized by the Cantabrian Government department of Education between the 3rd and 4th of May, 2017 in Torrelavega (Cantabria). KIKS students from San José school, La Albericia school, and the Vega de Toranzo school presented their activities to other teachers and students of the region. Within the presented projects we underline ‘Update you Torch’, ‘Saimon Says with Arduino’ and ‘Guarding our High School’ More information about the event can be found at [here](#).

VIII CIBEM

Students of Lope de Vega School, San José School and De Sar school participated at the [VIII Ibero-American Congress of Mathematics Education \(CIBEM\)](#). They presented several the KIKS activities elaborated during the academic year 2016-2017. The CIBEM is a multitudinary congress to which attended about 2000 secondary education teachers from different parts of Spain, from different South American countries, and from Portugal. Apart from presenting their projects, the KIKS students interacted and shared information with all this range of teachers. See the video of the trip [here](#).



7.2.2 Conferences and Talks

In addition to the KIKS-related events, the Spanish KIKS group has mostly promoted the KIKS project in conference talks and workshops all over the globe. A list of the most relevant talks is provided below.

5th March 2016: ‘Kids Inspiring Kids (KIKs): Chicos Motivan a Chicos en Ciencia’ Presentation by Maitane Pérez. Seminario Federal: “El papel del profesorado de matemáticas para la promoción de los estudios científicos e ingenierías y para la ciudadanía”, Organización de Estados Iberoamericanos (OEI), Madrid, Spain. Further information [here](#).

24th March 2016: ‘Kids Inspiring Kids (KIKs): Chicos Motivan a Chicos en Ciencia’ Presentation by Jose Diego. Seminario para el profesorado. Universidad Santiago de Compostela, Spain. More information [here](#).

15th August 2016: ‘KIKS- Kids Inspire Kids for STEAM’. Presentation by Jose Diego, Tony Houghton and Zsolt Lavicza. Hungarian STEAM Symposium. Hungarian Cultural and Scientific Centre, Helsinki. More information [here](#).



18th November 2016: Proxecto KIKS: interdisciplinaridade de dimensión europea. Presentation By Jose B. Búa. XXIX Congreso de Ensinantes de Ciencias de Galicia (ENCIGA). Galicia, Spain. More information [here](#).



4th February 2017: Kids Inspiring Kids for STEAM (KIKS): Presentation by Maitane Pérez. 10th Congress of European Research in Mathematics Education (CERME). Institute of Education, Dublin City University. Dublin, Ireland. More information [here](#).

11st July 2017: Proyecto KIKS (Kids Inspire Kids for STEAM). Presentation by Alejandro Gorgal. VIII Congreso Iberoamericano de Educación Matemática (CIBEM). University Complutense of Madrid. More information [here](#).

14th July 2017: Desarrollo de cinco actividades STEAM con formato KIKS. Presentation by Arturo Bravo, Pablo Cañizal. VIII Congreso Iberoamericano de Educación Matemática (CIBEM). University Complutense of Madrid. More information [here](#).

14th July 2017: Interacción y difusión de los productos KIKS. Presentation by Ignacio González. VIII Congreso Iberoamericano de Educación Matemática (CIBEM). University Complutense of Madrid. More information [here](#).

4. News: newspapers and Radio

KIKS has been on the news at different levels, with significant impact at local and national levels in Spain. Information about the progress of project, and the different organised events, has appeared on different media: national newspapers, local newspapers, Radio, and well recognised Educational websites and online platforms.

- National newspapers:

[EFE Agency \(20th May 2016\)](#): writes about the KIKS Kick-off session in Spain and about the Spanish schools opportunity for participating in the project.

[Noticias Press \(27th February 2017\)](#): writes about KIKS its objectives and the opportunity of the Spanish schools for participating in the project.



- Local newspapers:

[Diario Montañés \(28th March 2017\)](#): writes about the participation of the KIKS Spanish schools at the Science Cambridge Festival and their visit and interaction with the English from Cambridgeshire.

[Diario Montañés \(14th March 2017\)](#): writes about the KIKS Roadshows undertaken at university of Cantabria and in particular about the two STEAM activities proposed to the participant teachers: (1) Using Tracker to study physical phenomena; and (2) Measuring the concentration of gas in carbonated beverages.

[Cantabria 24 horas \(27th February 2017\)](#): writes about the KIKS Roadshows undertaken at university of Cantabria and in particular about the STEAM activities proposed to the participant teachers for implementation in their classrooms.



[Pontevedra Viva \(13th November 2016\)](#): writes about the participation of the Galician schools in the KIKS project as well as their connection with KIKS English schools. The news talks in particular about the coloration between IES Sanchez Cantón and Altón Covent Schools, from Spain and England respectively.



[Diario de Pontevedra \(17th November 2016\)](#): writes about the participation of the KIKS school Sánchez Cantón in the Teen Tech competition, organised in the UK.

[Diario Montañés \(10th May 2016\)](#): writes about the KIKS activities/content developed by the members of the KIKS project at university of Cantabria and the importance of implementing STEAM activities in the Spanish classrooms.

[Diario Montañés \(24th May 2016\)](#): Members of KIKS at university of Cantabria talk about the Project and the importance of the Science areas in education.



- Radio:

[Radio Post Cadena SER \(10th June 2017\)](#): KIKS's members speak on the radio about the multiplier event in Cantabria.

[Radio Post Santander Viva \(7th June 2017\)](#): KIKS's members speak on the radio about the multiplier event in Cantabria.

- Educational website News:

Unican (15th June 2017): writes about the KIKS multiplier event which took place days before; number of presented projects, students and schools participating, parents, and other guest invited.



Unican (9th June 2017): Announces the KIKS Multiplier event, which took part at university of Cantabria. This was a call to invite teachers, parents, policymakers and others to come alone to the KIKS event and to participate in it in many different ways.

Facebook de la UC (15th June 2017): different news about the Spanish multiplier event are published at the UC Facebook. Information about the Spanish KIKS teams and the prize given to the participants is provided.

Unican Web Site (28th March 2017): announces the trip to Cambridge of the Spanish Schools. Information is given about the schools participating in the event and also about the Spanish projects presented in the UK.

Educantabria (31st March 2017), a governmental educative website writes about how KIKS project promotes the teaching and learning of STEAM areas in Spanish secondary education schools.

Unican (27th February 2017): writes about how KIKS project promotes the teaching and learning of STEAM areas with Spanish pre-service teachers at University of Cantabria. The news also highlights KIKS the hothousing roadshows at the Spanish secondary education schools.



[Unican \(26th October 2016\)](#): writes about KIKS project and its participation in the Science Day, organised by the University of Cantabria. Several KIKS schools presented at the Science Day their STEAM projects, developed during academic year.



[Unican \(15th September 2016\)](#): writes about the progress of KIKS project in Cantabria, and makes a second call to invite further schools and secondary education students to participate in the project.

[Unican \(13rd May 2016\)](#): announces KIKS and their Kick-off session at University of Cantabria. Members of KIKS presented the

project to several dozens of teachers from different schools in the region of Cantabria.

[Facebook de la UC \(16th May 2016\)](#): announces KIKS and their Kick-off session at University of Cantabria. Members of KIKS presented the project to several dozens of teachers from different schools in the region of Cantabria.



[Unican \(24th May 2016\)](#): disseminates KIKS project and highlights the participation of the university of Cantabria and Cantabria schools in the project.

[Educantabria \(12th May 2016\)](#): announces KIKS and the participation of the IES Lope De Vega School in the project. This school has fit out a KIKS schoolroom where to elaborate its STEAM activities, as part of the KIKS project.

[Unican \(13rd November 2015\)](#): disseminates KIKS project and highlights the participation of the Cantabria schools (as well as other Spanish schools) together with European schools.

5. Publications

As part of KIKS project, a number of papers have been written and published in books, and conference proceedings. This has also helped to disseminate the project and to get involve new teachers and students to continuing collaborating in the project, enhancing the Spanish STEAM community already created. Below we list the papers publish during the project life cycle.



Búa, J. B., Blanco, T. F., Diego-Mantecón, J. M., Istúriz, M. P., González-Ruiz, I., Recio, T., Búa, J. B., González, M. J. and Polo, I. (2016). Proxecto KIKS: interdisciplinaridade de dimensión europea. En Lires et al. (eds.) Boletín Das Ciencias XXIX Congreso ENCIGA. Santiago de Compostela. ENCIGA. ISSN:0214-7807

Istúriz, M. P., González-Ruiz, I., Diego-Mantecón, J. M., Recio, T., Búa, J. B., Blanco, T. F., González, M. J. and Polo, I. (accepted). Kids Inspiring Kids for STEAM (KIKS), in Dooley, T. & Gueudet, G.. (Eds.) (2017, in preparation). Proceedings of the Tenth Congress of the European Society for Research in Mathematics Education (CERME10, February 1 – 5, 2017). Dublin, Ireland: DCU Institute of Education and ERME.



Diego-Mantecón, J. M., Blanco, T. F., González, M. J., Istúriz, M. P., Gorgal, A., González-Ruiz, I., Búa, J. B. and Recio, T. (accepted). Proyecto KIKS (Kids Inspiring Kids for STEAM). Proceedings of VIII CIBEM. Madrid, Spain.



Diego-Mantecón, J. M., Bravo, A., Arcera, O., Cañizal, P., Blanco, T. F., Recio, T., González-Ruiz, I. and Istúriz, M. P. (accepted). Desarrollo de cinco actividades STEAM con formato KIKS. Proceedings of VIII CIBEM. Madrid, Spain.



Diego-Mantecón, J. M., González-Ruiz, I., Blanco, T. F., Istúriz, M. P., Gorgal, A., Búa, J. B. and Recio, T. (accepted). Interacción y difusión de los productos KIKS. Proceedings of VIII CIBEM. Madrid, Spain.

6. Conclusion

We think that this report clearly yields several evident conclusions. One, that the small group of members of the Spanish KIKS project (9 members, mostly from the Mathematics Department of the University of Cantabria, but also including two from the University of Santiago of Compostela, in the not so distant region of Galicia), have devoted a lot of time and efforts along the past years. Time and efforts dedicated to the dissemination of KIKS goals, to the training and support of teachers' involvement in the project and, most crucially, to making possible the creation and development of so many teams of students. We believe that this report clearly supports this statement.