THE PROJECT

Recent research have demonstrated that early techno-scientific literacy in children as young as 4 years old could improve their long-term achievement in STEM fields and raise the scientific and technological vocations, especially for girls.
Competencies acquired during childhood, including design thinking, inquiry, coding and robotics, are transferable to other areas. These skills are applicable to all areas during their whole academic and labour life.

BOTSTEM aims to develop a new methodology for integrating STEM programmes into the formal education curricula for childhood and primary schools (4-8 y.o.), using inquiry teaching and educative robotics and code-learning

Its main objectives are:
• To improve the potential students' achievement applied to STEM subjects, particularly in Natural Sciences and Mathematics
• To implement innovative methodologies, using inquiry teaching and computational thinking.
• To develop tools, resources and methods specifically developed for teachers, more motivating and appealing from the point of view of students from 4 to 8 years old.

BOTSTEM will implement inquiry teaching units with a robot-based approach, including code-learning, for enhancing the education in STEM fields.

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BOTSTEM FIRST MULTIPLIER EVENT
"Free and mindful opportunities in schools to change the Future"
Verona 30th March 2019

The first botSTEM multiplier event has been organized in Verona (Italy) by Polo Europeo della Conoscenza with the title "Free and mindful opportunities in the schools to change the Future" at the Conference Centre of San Zeno on the 30th March 2019.
The event has been structured as a conference with international participants not only from the project's countries but also from Republic of North Macedonia, Bulgaria, Lithuania, Russia, Uruguay.
The speakers from Italy and other European and extra-European countries have been 50.
At the conference participated a total of 506 attendees of which 18 foreigners form Republic of North Macedonia, Bulgaria, Lithuania, Russia, Uruguay and 64 students.

During the morning there has been a plenary session with the introduction by both the Regional and Provincial director of education and 6 keynote speeches.

Ileana M.a Greca, full teacher in Specifics Didattics Department at the University of Burgos, presented botSTEM, a European project, and talked about robotics and STEM education for children and primary school.

Serafino Caloi, Primary School teacher, talked about his approach to teaching mathematics and how creativity helps in teaching and learning STEAM.

Ernesto Burgio, epigenetist, pediatrician and president of the ECERI, European Cancer and Environment Research Institute of Bruxelles, talked about the neurodevelopmental disorders and the risk of children's brain in the Digital world.

Daniela Lucangeli, professor of Developmental Psychology at the University of Padua, author of numerous research contributions in the field of mathematical learning and member of national and international

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scientific associations in the field of Learning and Developmental Psychology, talked about the need to chance the educational models and the teaching approach to avoid the cognitive gavage and performance anxiety.

Franco Nembrini, teacher, writer and pedagogist, talked about school and Math like one of the many Dante's Divine Comedies and how to involve the students and to motivate them.

Raissa Pshenichnikova, Director at the Academy of Culture and Art of Eastern Siberia, talked about the sacred geometry of cosmos as an evolution of man and the development of his spiritual consciousness.

The video of the plenary session is at this link: http://www.europole.org/en/video-international-multiplier-event-free-and-mindful-opportunty-in-scool-to-change-the-future/

During the afternoon 25 parallel workshops took place in the rooms of the conference centre covering several topics: innovative STEM education methods, educational robotics, scientific experiments in primary school, teaching to disabled students with robotics and new technologies, early childhood education, teaching prosocial values, aware use of internet and smartphones, inclusive education for immigrants, etc.

[Click here to continue reading about the workshop given by the botSTEM partners...]

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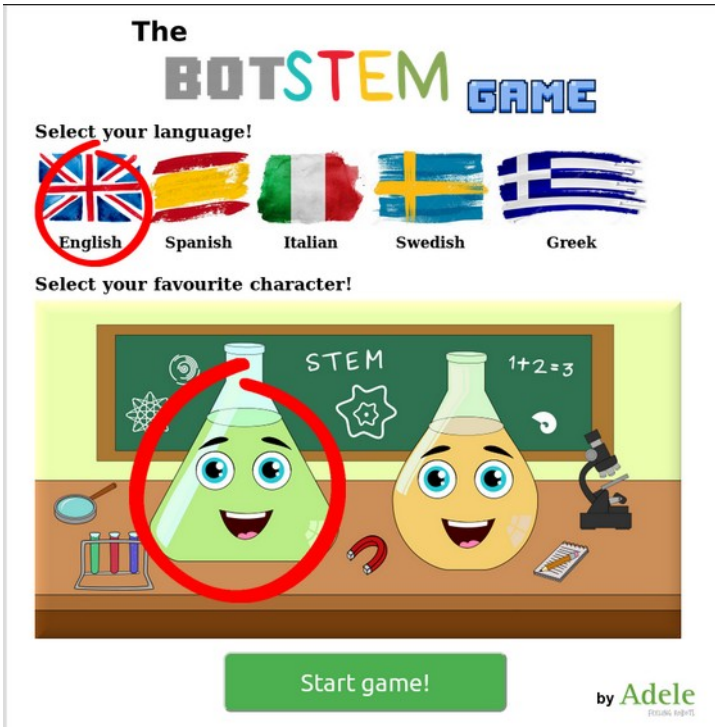
THE BOTSTEM GAME

The BotSTEM partners have created a new game called THE BOTSTEM GAME in 5 languages (English, Spanish, Swedish, Greek and Italian) for teachers to facilitate the introduction of STEM (Science, Technology, Engineering and Maths) , robotics and programming disciplines in the classrooms in a fun way.
To get the best of the game, teachers should first spend some time in class discussing with students what and how scientists and engineers do and also basics ideas about robotics and programming (teachers can find information about this matter in the Toolkits uploaded in www.botstem.eu). Once this step is fulfilled, you can start to play with your students!

[Click here to read more on how to play the game...]



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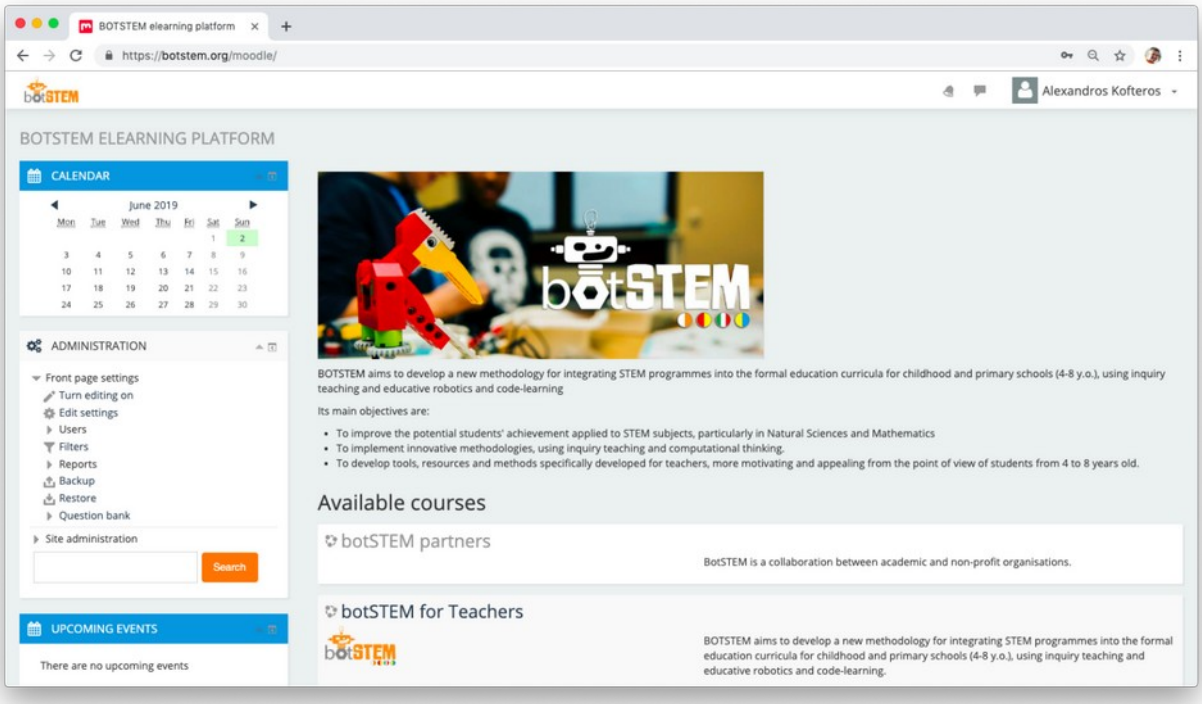
BOTSTEM.ORG: AN ONLINE COMMUNITY OF PRACTICE

One of the aims of BOTSTEM is to create an online community of practice for teachers interested in implementing STEM activities in their teaching. The botstem.org platform is based on the leading Virtual Learning Environment Moodle which offers tools for the creation and dissemination of interactive activities and social inclusion, using forums, chatrooms and even live audio-video conferencing.

[Click here to know more about the community...]



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The joy of creating your own command

Modification of the Toolkit activity "Children programming each other as bluebots"

As a result of teachers trying out the different activities in the botSTEM toolkit, the practices are modified and adapted to the different child groups. In the original version of the activity "Children programming each other as bluebots", three children worked together as one observer, one programmer and one 'bluebot', programmed on the back to walk a path of arrows.

In Sweden, a preschool teacher modified the activity and simplified the arrangement by concentrating it to the arrow path.

[Click here to read more on how the activity has been modified...]

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Evaluating the Social Impact of early-STEM education and innovative technologies in the Childhood and Primary Education

Our partner Kveloce I+D+i is conducting the baseline for evaluating the social impact assessment in the BOSTSTEM project.
This evaluation aims at enlightening is our project can change attitudes, perceptions and behaviours of the whole education community and, at some extent, to change the subjacent systemic conditions (policies, regional or national curricula and so on). In addition, the SIA should analyse if BOTSTEM could contribute to a change as regards of the pedagogical trends in the long term and discuss the transferability of the model to the EU and LMIC countries.

Our baseline evaluation continues: if you wanna take part and you are available for being interviewed, please, contact us at bvallina [at] kveloce [dot] com. We can conduct interviews in English and Spanish.

[Click here to know more about the evaluation...]

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BOTSTEM TRAVELS AROUND THE WORLD

During 2019 botSTEM Project has been introduced at different conferences in order to make the project objectives, contents and actions developed till now, known worldwide This action of dissemination let educational community create a better networking and reinforce STEM education.
PhD. Ileana Greca presented botSTEM at the II Scientix Spanish Meeting held at the Museo Nacional de Ciencia y Tecnología, in Alcobendas, Madrid, at the 19th International Teaching Forum of Science and Technology celebrated in Buenos Aires, Argentina, at the 15th Scientix Projects' Networking Event in Galway (Ireland) and at the 13th Conference of European Science Education Research Association (ESERA).

[Click here to read more about the places where botSTEM has been presented...]

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