

CAN INDUSTRIES HELP SCHOOLS AND TEACHERS MAKE STEM EDUCATION AND STEM CAREERS MORE ATTRACTIVE TO STUDENTS?

BJÖRN BACHMANN, MANAGER OF THE STEM ALLIANCE AT EUROPEAN SCHOOLNET, EXPLAINS HOW THE STEM ALLIANCE IS BRINGING INDUSTRIES, MINISTRIES OF EDUCATION AND EDUCATION STAKEHOLDERS TOGETHER TO SUPPORT STEM EDUCATION AND ADDRESS FUTURE SKILLS GAPS IN THE EU



ABOUT THE STEM ALLIANCE

The STEM Alliance is a Europe-wide initiative, coordinated by European Schoolnet, that aims to bring together STEM education and STEM careers. It is an ambitious and ongoing collaboration that was created when European Schoolnet's inGenious project came to an end in 2014. It brings together industries, Ministries of Education and other stakeholders to promote STEM education. In real terms, the STEM Alliance is aiming to support teachers with links to industry professionals, who can provide real-world examples of STEM's use and support STEM subjects that are often studied in isolation: www.stemalliance.eu/home



WHAT IS YOUR ROLE IN THE STEM ALLIANCE?

As project manager, I oversee all the different activities, events and projects that we organise within the framework of the STEM Alliance. I also coordinate our stakeholders to come up with concerted actions to address the STEM skills gap. Our stakeholders are the Ministries of Education, industry partners and STEM advocates across Europe.

CAN YOU TELL US A LITTLE ABOUT YOUR BACKGROUND?

My educational background is in political and international studies, but I have always been active in social projects and educational issues. That's why it made sense for me to combine my political and educational interests through a project like the STEM Alliance. I didn't want to be a politician growing up, but I definitely wanted to work in a field that has an impact on society. I think that's where I am now.

WHY ARE YOU PASSIONATE ABOUT STEM EDUCATION?

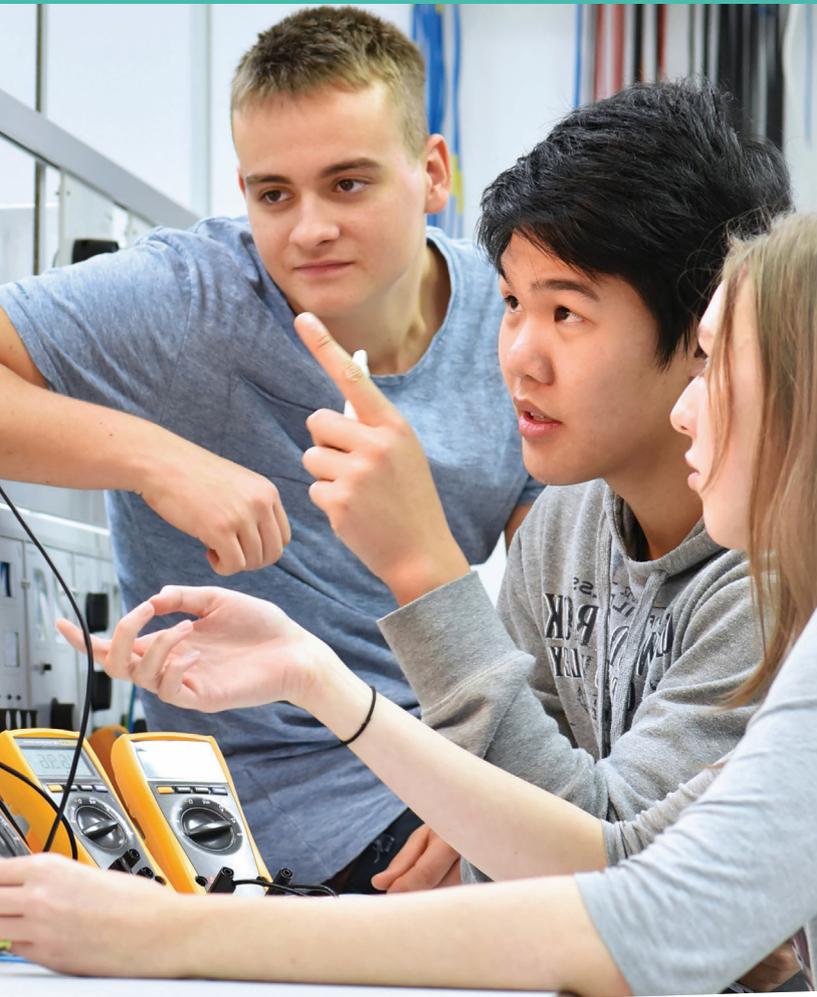
What comes to mind when many people think about STEM is periodic tables, chemistry, and complicated maths formulas and graphs. It was the same for me at high school. But STEM is so much more than that; it really has an impact on our daily lives. For example, we're chatting over Zoom and your readers will read this article online. Simple, day-to-day activities like these, and technologies like ovens and fridges, all come from science.

It's important that we have at least a basic understanding of STEM, so that we can become analytical, responsible and innovative citizens of the future – and be able to tackle all the challenges we face, such as climate change, mobility, sustainable energy and so forth.

DEMAND FOR STEM PROFESSIONALS IS EXPECTED TO GROW BY 8% BY 2025 AND YET EUROPE IS EXPERIENCING A SHORTAGE IN STEM SKILLED WORKERS. HOW CAN WE SOLVE THIS ISSUE?

It's important is to address this issue in a concerted way. We cannot work in isolation, where each company, each government, each teacher tries to address STEM issues alone. That's why we need platforms like the STEM Alliance to bring initiatives together, share approaches, and exchange good practices with all stakeholders.

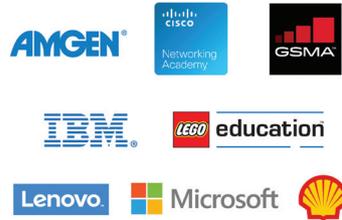
Many companies and policymakers are addressing STEM studies and careers at the university level, but we believe that foundations need to be laid at an earlier level – at primary school. We need to support



COORDINATOR



PREMIUM PARTNERS



GENERAL PARTNERS



The STEM Alliance has partnered with 16 companies.

MORE ABOUT...

EUROPEAN SCHOOLNET

European Schoolnet was founded in 1997 and is a network of 33 European Ministries of Education, based in Brussels.

schools, teachers and students with innovative pedagogies for teaching STEM subjects.

I also think it's important to contextualise STEM education. Currently, STEM education in Europe seems abstract and detached from real life, and I think it would help if students were taught just how important STEM is.

HOW DOES THE STEM ALLIANCE SUPPORT TEACHERS?

We tackle two core phenomena: lack of interest in STEM subjects in schools and lack of interest in STEM jobs. To do this, we have partnered with 16 companies, including Microsoft, Lego Education, Dell Technologies and Amgen Europe, as well as Ministries of Education across Europe.

Just to be clear, I think teachers are doing an amazing job, but it's important to support them with teaching materials and continuous professional development. As such, we organise conferences, online events and competitions, specifically aimed at teachers. For example, we ran a competition with LEGO Education, which called on teachers to integrate LEGO Education resources into the classroom. We also promote companies' existing STEM initiatives, which contextualise STEM education and encourage collaboration between industries and the education sector.

YOUR INDUSTRY PARTNERS PROVIDE SOME FANTASTIC RESOURCES, WHICH ARE UPLOADED TO THE STEM ALLIANCE'S PRACTICES REPOSITORY. HOW MANY RESOURCES ARE AVAILABLE ON THIS REPOSITORY?

The repository features hundreds of resources, publications and CPD opportunities. Both educators and students can access webinars and talks. For example, Microsoft hosted a webinar on artificial intelligence

earlier in the year, which is available on our site, and there are many more like this.

THE STEM ALLIANCE ALSO PROVIDES RESEARCH-BASED INSIGHT ON VARIOUS STEM EDUCATION AND CAREERS SUBJECTS. WHAT IS THE LATEST INSIGHT?

One report carried out by European Schoolnet and supported by Amgen Europe and the STEM Alliance investigates the attractiveness of STEM subjects. It looks at how to make STEM studies and careers more appealing to youth in Europe.

Another report produced in collaboration with STE(A)M IT found that, in Europe, most STEM subjects are taught in isolation. So, rather than having an overarching STEM class, science is divided into physics, chemistry and biology, and maths and technology classes are taught separately. To get students to see just how important STEM is, and interested in STEM degrees and careers, it's important to teach STEM subjects in an integrated way.

WHAT ADVICE DO YOU HAVE FOR TEACHERS OF STEM SUBJECTS?

I think the advice that I could pass on to teachers is that they're in the driving seat. They can decide where the focus needs to be and think creatively about how to achieve this focus. One example is partnering with local businesses or shops, just as one teacher did when they worked with a local pharmacy to deliver maths classes.

Some teachers may fear that businesses are simply advertising their products, but that's not what the STEM Alliance is about. It's about making STEM subjects more attractive, and supporting innovative practices in STEM teaching, to contextualise STEM education and increase interest in STEM, overall.