



# MAKING STEM A BUSINESS PRIORITY



Donald Morrison, Jacobs' People & Places Solutions U.K./Europe Senior Vice President and General Manager and Global Executive Sponsor of Digital

**Science, technology, engineering and mathematics (STEM) is at the epicentre of developing the future and addressing complex issues such as urban migration, catastrophic climate threats, cybersecurity and natural-resource stresses. Despite the number of U.K. undergraduates studying STEM subjects increasing by 16% over the last decade (compared to an overall increase across all subjects of 13%) undergraduate numbers for EU students increased by 52% and the rest of world rose by 63% (source: ABPI 2019). The U.K. Government's commitment to invest £600 billion in infrastructure will help fund many STEM jobs, so how do we ensure we have sufficient pipeline of STEM skills in the U.K?**

Collaboration between business, education and Government is clearly key to investing in and delivering the workforce of the future; raising young people's skills, aspiration and knowledge of STEM careers. A STEM education has economic, social, cultural and ethical value, with positive impacts on social mobility and

the U.K.'s levelling up agenda, as well as promoting diversity and equality in future careers.

Government clearly recognises the importance of these skills – with focus already brought to T Levels, apprenticeships and extra university places for STEM subjects, and we welcome its ambition to make 'the U.K. a scientific superpower' and

support the development of technologies to reach net zero carbon emissions by 2050.

At Jacobs, we are equally supportive of closing the STEM skills gap; it's a clear business priority for us. We work to solve some of the toughest challenges faced by our clients and communities. This means bringing diverse teams of



Pictured with Jacobs President and Chief Operating Officer Bob Pragada (far right), Professor Brian Cox talks to 16 to 18-year-olds from local London schools about the skills they will need for the future.



multidisciplinary specialists together to create solutions which focus on delivering outcomes with social, environmental and economic benefits. Our people work on everything from traditional engineering design, to economic and environmental assessments, cyber security, digitalisation of client asset bases, carbon footprint reduction, to complete programme delivery. Putting their knowledge and imagination together, they reinvent the way we solve problems and shape the next generation of smart solutions. That demands all sorts of expertise and experience, from scientists, engineers and project managers to economists, aquatic ecologists, data scientists and digital specialists.

So, it's business critical that we promote STEM and be a key contributor to the broader skills solution, to keep pace globally, and to help drive a vibrant

economy for all. It's important for us to provide career pathway opportunities for disadvantaged communities and to make a social value impact where it matters most.

As a business, we're working to influence positive change. Through our STEM engagement, we can influence the education and career decisions of future generations and attract a diverse and broad spectrum of talent with the future skills needed – ensuring a steady pipeline of skilled professionals.

### INVESTING IN STEM EDUCATION

A lot of the STEM discussion is around the "national" STEM skills shortage. Yet we see the need for different STEM skills in different parts of the country, for

example, science and nuclear engineering skills in our operations in Cumbria and Warrington, and digital and project management skills in our Birmingham and London teams. The North of England is one of the most dynamic, innovative and creative parts of our country; investing in the right STEM skills here will underpin the Northern economy's future productivity and competitiveness. Jacobs employs 3,000 people in our Northern cities and regions, teams delivering transformative infrastructure projects for the region. Use of social value measurement tools, like Simetrica-Jacobs' equity weights (estimated using a Green Book compliant method), for priority setting for education and employment connected to

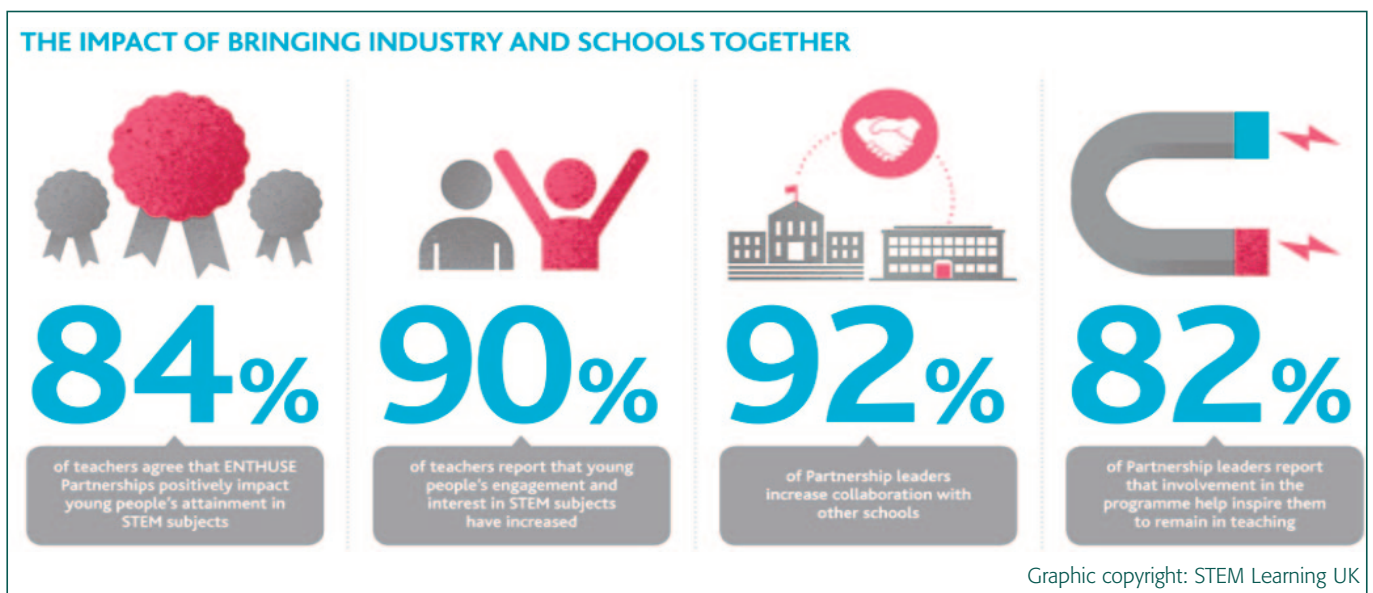
infrastructure investment, can help shape better outcomes in more challenged areas.

By working together, local and regional partners across business, education and government can better understand the specific STEM jobs and skills that are needed in specific parts of the country.

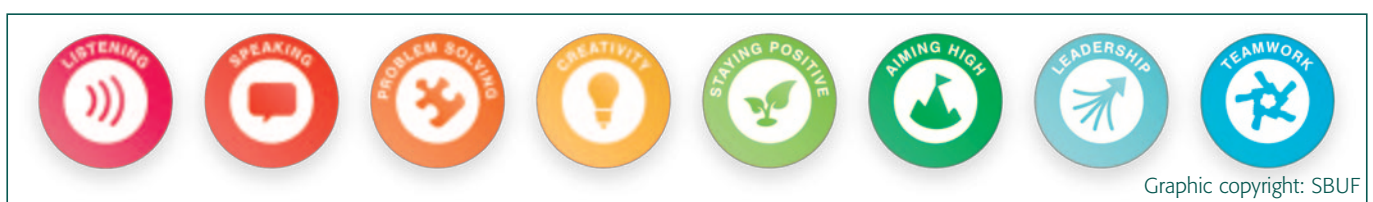
Working in conjunction with STEM Learning U.K., for example, we're bringing schools together to form 'ENTHUSE Partnerships'. These make lasting improvements in the quality of science education, with each partnership school cluster raising aspiration and achievement for thousands of young people. It's about having an impact where its most needed. STEM employers can invest, leveraging the

*"We recognise the quality of teaching has the greatest influence on achievement, career destination and the power to change the lives of young people."*

Tricia Stephenson Jacobs STEM Lead, Europe



Aligning these partnerships with, and embedding the language of, the Skills Builder Universal Framework (SBUF) is also essential.



Government's investment in continuing professional development for science teachers, and engaging with schools through STEM Learning's network that we'd otherwise not reach. Jacobs is currently piloting three partnerships, supporting schools in Bristol, Manchester and Glasgow to drive and create sustainable improvements.

Considering the current fourth Industrial Revolution and the impact of COVID-19, future jobs highlight the need not just for technical knowledge, but for creative ingenuity, non-cognitive skills and agility. Over the last four years the Skills Builder Framework has been developed to make sense of how essential skills are progressed. It breaks down eight essential skills into sequential steps from

skills development for our 800+ graduates, interns and apprentices currently training in the U.K.

### PROMOTING GENDER DIVERSITY AND EQUALITY

To develop the STEM skills the U.K. needs, it continues to be vital that we collectively promote gender diversity and equality in STEM learning and the workplace. As an employer of more than 10,000 people in the U.K., diversity powers our collective strength and our ability to stay ahead to create the new standards our future needs. Relationships with organisations like the Careers Enterprise Company help break perceptions by encouraging young women to succeed in

### BUILDING INDUSTRY EXPERIENCE VIRTUALLY

Industry and commercial experience are essential to gaining a better understanding of career pathways. In response to lockdown, we rapidly developed, tested, and delivered a suite of on-line STEM initiatives, making a positive impact in our local communities through a collaborative, inclusive and sustainable way to support young people, parents and teachers.

*"It has been great ... to participate and find out about the spectrum of jobs within engineering, from health and safety to interior design."*

Alex, 15 yrs. old participant

who may otherwise be disadvantaged by distance or resources, making virtual delivery more inclusive. Going forward we're engaging our clients and other industry partners with resources to support their own education programmes.

As we look to the future of work and how our future talent force needs to evolve, interdisciplinarity is at the heart of the majority of solutions we create for clients. We intentionally put multiple disciplines around a client problem. So, having a pipeline of future talent that have studied science, engineering and other disciplines provides diversity of thought and helps us find the best range of solutions and better outcomes. STEM skills are essential for tackling the biggest issues of our time. Across our business, our people are working on projects to safeguard the environment, and improve the security, connectivity, resilience and productivity of the U.K., so it's vital that we inspire and support the education and career decisions of our future generations.

Every young person deserves a world-leading STEM education, one that engages and nurtures their unique talents, and provides the knowledge and investigative, creative and practical skills they will need to participate fully as the creators and citizens of tomorrow. They are the new talent we all rely on to help create an economically vibrant, greener and more equitable U.K. and a more sustainable world. If we are to achieve net zero by 2050, it is the STEM skills and the young people we are training now who will 'reinvent tomorrow'. □



Katie and Rebecca, two of our Engineering Degree Apprentices in the U.K., are inspiring young women and girls to consider engineering as a profession.

expectations of children to a high level of mastery. We work with our people to raise their individual awareness of their own skills through the lens of the framework. It provides the foundation we need to ensure everyone builds the essential skills to thrive in the future workforce. It helps us shape both the technical and softer

STEM and Apprenticeship routes.

Our global Action Plan for Advancing Justice and Equality, builds on our existing global inclusion and diversity strategy, TogetherBeyond<sup>SM</sup>, and sets actionable initiatives and measurable objectives in Jacobs' continuing efforts to address embedded and systemic racial inequities.

Our virtual work experience programme takes students through the design of a science research facility giving the opportunity to develop STEM skills ranging from project management to architecture, and other critical skills like problem solving and understanding multiple data sources. Students participate

