



Tata Consultancy Services and partner Discovery Education have developed a programme that improves Computational Thinking skills in US students to prepare them for changing workplaces.

THE CONTEXT



In today's Business 4.0 world, where digital technologies are rapidly reshaping the ways enterprises do business, companies need to play an active role in democratizing access to new economic opportunities. Computational thinking (CT) skills are the great equalizer, giving learners a problem-solving mindset for the 21st century.

By 2020, there will be one million computer science and technology related jobs in the US with not enough qualified graduates to fill them. However, less than 25% of US schools offer computer science related courses; even fewer have integrated computational thinking. In addition, of the ~3.1 million public school teachers, only ~10,000 teach CS in high school. Only a small portion of the country's 50 million K-12 students are learning skills that can lead to in-demand jobs.

Computational Thinking is the foundational skill that will prepare students to be employable, productive, and resilient in workplaces with emerging technologies like artificial intelligence and machine learning. The Ignite My Future in School (IMFIS) programme – developed by Tata Consultancy Services with delivery partner Discovery Education – is reimagining public education by empowering teachers and schools, so students can learn the skills needed to be productive in the new world of work.

THE INNOVATION



IMFIS is a pioneering effort to empower US educators through a transdisciplinary approach that integrates computational thinking into core subjects like math, science, art and social studies. The objective is to provide best-in-class professional development, with first-of-its-kind computational thinking resources aligned to national standards and frameworks, an interactive digital platform, a community of teacher leaders, and year-round engagement. Current Computer Science education efforts focus on creating policy, standards, certifications, and recruiting teachers. IMFIS adopts a paradigm shift by democratising the adoption of computational thinking for all educators and students – free of cost. Through its innovative approach, IMFIS aims to empower 20,000 teachers and 1 million K-12 students by 2021.

THE IMPACT

Till date, IMFIS reached nearly 8,000 educators and more than 460,000 students across 50 US states and Washington, DC. IMFIS has empowered educators across 81 school districts through a high touch in person model as well as a digital model. 99% educators indicated that they were ready to incorporate an element of Computational Thinking in their classroom. This unique intervention has resulted in \$4.8M in savings to educators.

KEY CHALLENGE



PROGRAMME DESIGN

IMFIS has faced several challenges that required important inflection points in order to monitor and revise program design and delivery. Challenges have ranged from policy changes to how computer science teacher certification is provided and approved. With a view of the educational landscape in the US, TCS was keen on designing a program that leveraged educators as the critical change agents while integrating the solution within the school experience as opposed to out of school programs. An additional layer of stakeholder engagement which includes participation with nationally and locally elected officials to understand policy change, educational experts, school administration to constantly keep abreast and ahead of the changes and plan on future interventions.

