

Teaching Tomorrow's Skills Today: Insights from the Teach Tech Kentucky Project

How can we prepare students early to develop the technical skills needed for future careers?

This question is urgent given the growing demand for computer science and AI expertise.



One approach is incorporating computing skills into core instruction.

The Ohio Valley Educational Cooperative (OVEC) launched Teach Tech Kentucky (TTK) to address this need. TTK provided Kentucky teachers with self-paced professional learning and micro-credentials aligned to state computer science and math standards through BloomBoard Inc. OVEC also offered tailored supports to meet local priorities.



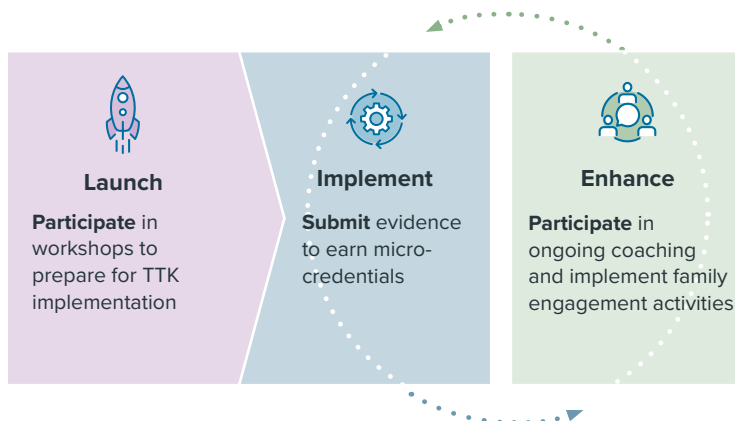
The goal: Equip more elementary and middle school teachers to integrate computer science and computational thinking (CS/CT) into their math instruction while maintaining high-quality math teaching. American Institutes for Research (AIR) partnered with OVEC to evaluate TTK's impacts on teachers and students.



Computational thinking:

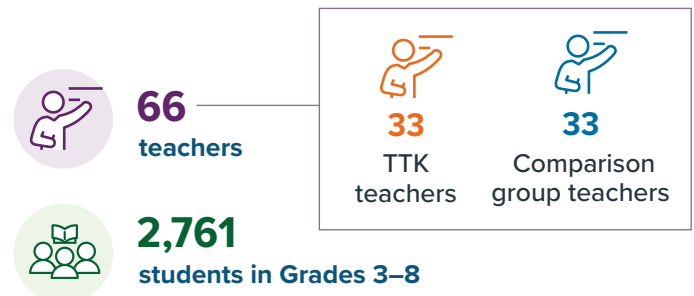
Skills and practices in computer science, such as pattern recognition and algorithm development, that can be applied to other areas.

The TTK Program

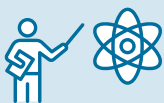


Who Took Part

Teachers were assigned by lottery to start TTK right away or the following school year. The study included two cohorts of teachers across the 2022–23 and 2023–24 school years.



What We Asked



What is the impact of TTK on **teachers' attitudes and beliefs** in **CS/CT instruction**?

Data sources
Teacher surveys



What is the impact of TTK on **student math achievement**?

Data sources
Kentucky Summative Assessment in math



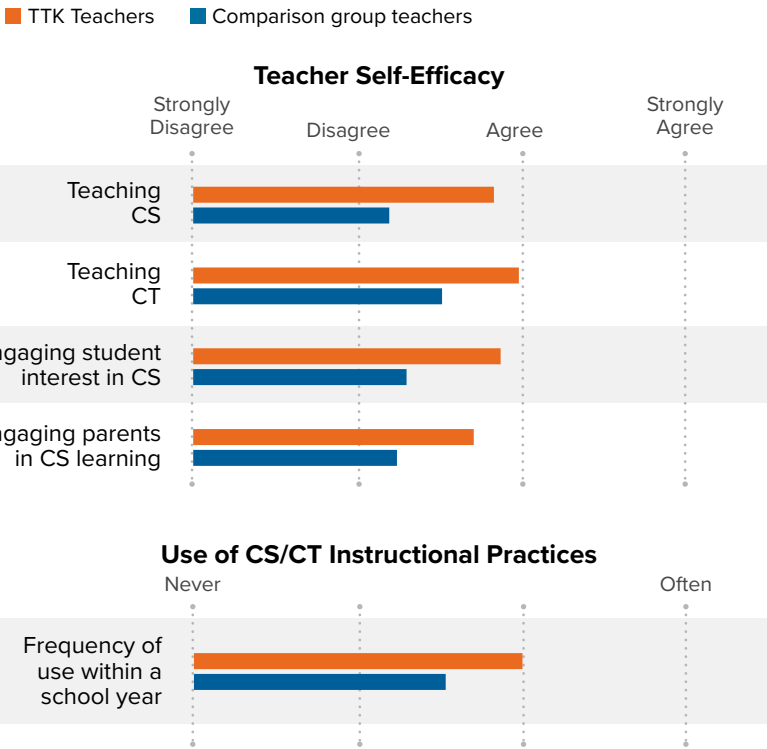
What are teachers' **perceptions of and experiences** with participating in TTK?

Data sources
Teacher surveys and teacher interviews

What We Found

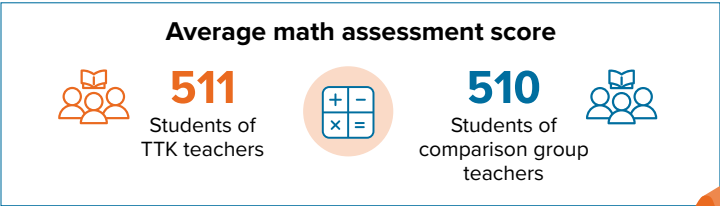
TTK had positive impacts on teacher self-efficacy and use of instructional practices

TTK teachers were more likely to feel they were able to effectively teach CS and CT to their students and engage parents in CS learning, and to use CS/CT instructional practices.



Student math achievement did not change

Teacher participation in the TTK program did not meaningfully change student performance on the Kentucky Summative Assessment in math.



Teachers valued the student and family engagement

TTK teachers noted high levels of student engagement, and felt the family activities were especially successful in increasing engagement and interest for both students and their families.

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The success of it was just watching my students grow . . . understanding that an algorithm can be not only in math class, but it can be just them getting dressed or them going to school in the morning . . . And then bringing it into learning how to use an algorithm to code and to debug and then to code a robot. Their growth was phenomenal.

— Teacher

[The] biggest success was the family night . . . The students did all the teaching . . . I was able to allow them to just enjoy it with their parents and show them everything. So, that made me feel super proud of myself and them knowing that this program worked to teach them new things that we don't get every single day.

— Teacher

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Insights to Apply to Practice

Teachers found the TTK program valuable for their self-efficacy for teaching CS and CT, their instruction, and for engaging students and families. The study found no evidence of negative impacts on student math achievement, suggesting that integrating CS and CT into math instruction did not compromise students' math learning.

This study provides evidence about the possibilities for incorporating emerging technical skills into instruction, starting as young as third grade. These findings can inform current state and district efforts thinking about how to ensure their students are workforce ready, and how to evolve content instruction in response to ongoing technological progress.

