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Michigan House of Reps – Workforce & Talent Development Cmte

HB5463 Testimony

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Computer science drives innovation in the U.S. economy and society. Despite growing demand for jobs in the field, it remains marginalized throughout the U.S. K-12 education system.

There are many reasons for this. As you well know, teachers are already stretched pretty thin, and often it seems like there's just no bandwidth to add something new to a very full schedule. Additionally, some schools have few or no computers and/or tablets for classroom use.

But the earlier we introduce children to coding, the more comfortable they will be when presented with more in-depth learning opportunities in middle and high school. Also, early exposure to coding helps teach children how important it is to understand computers as the valuable tools they are rather than merely fun playthings.

Kids Want to Code

Even if you don't have a classroom full of future computer programmers, learning the fundamentals of coding provides students with skills that will serve them well in virtually any career they choose. Plus, there are few things that ignite and excite a room full of learners like a coding class.

In my work as the Director of Marketing & Communications at OST, a \$160m IT & tech services firm with nearly 200 employees based in Grand Rapids, I've participated in organizing STEAM-focused education outreach at many GRPS schools, and believe me, these events generate a lot of buzz. I've seen firsthand how excited both kids and their parents get over learning to code, but it's really the kids who enjoy the experience the most.

Children *want* to learn how to code. They want to learn how to make tablets and computers do useful things. They want to learn how to build websites. It's actually a very cool thing to them.

And while "cool" is nice, what really matters are the lasting benefits of building these skill sets:

- Logical thinking
- Problem solving
- Persistence
- Collaboration
- Communication

In order to do this it must be about STEAM...not STEM

The STEAM movement isn't about spending 20 percent less time on science, technology, engineering, and math to make room for art. It's about sparking students' imagination and helping students innovate through hands-on STEM projects. And perhaps most importantly, it's about applying creative thinking and design skills to these STEM projects so that students can imagine a variety of ways to use STEM skills into adulthood

Rather than focus on rote memorization or mastery of separate topics, STEAM uses project-based teaching to holistically foster students' skills in creativity, design thinking, tech literacy, collaboration, and problem solving. This sets students up for *success* in STEM, especially for those who might not seem to be naturally gifted in technical areas.

Ultimately, STEAM is people-centric, not subject-centric; it puts student personality and individuality at the forefront. With STEAM, the pressure is off to become a scientist or engineer—you can be a designer, digital artist, coder, art director, and scientist and engineer all at the same time. STEAM says we can be better engineers by learning how to think artistically, and we can re-engage artists with science by letting them see how STEM can work in the arts. It's infinitely more exciting, especially in an increasingly interdisciplinary and digital world. In STEAM, creativity is the central tenet. It not only revives and modernizes STEM, it actually addresses, through real-world projects, why the STEM subjects should matter to everyone.

And that's how we should all be learning.