Community and Economic Development in North Carolina and Beyond Blog: Coding for Economic Development

By CED Program Interns & Students

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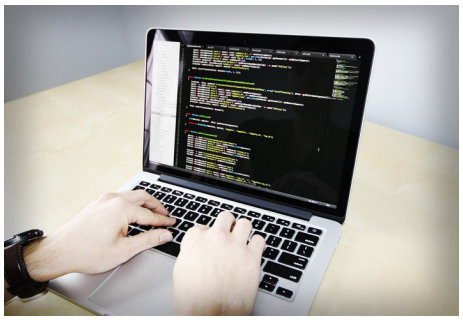

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"In short, software is eating the world." – Mark Andreessen, co-founded Netscape

From cell phones, cars, to wearable tech, software keeps finding new ways to enter our lives. Mobile apps are flourishing and have transformed service-delivery whether we are banking online, hailing an Uber ride, watching Netflix, or shopping on Amazon. In short, the increase in software and software-related positions potentially indicates a growing need for information technology positions and coding skills. According to a 2014 Brookings report, of all STEM fields, information technology had the most job postings in the US. However, jobs that require programming skills stay open for twenty days longer than non-STEM jobs. The growth in software development is not restricted to information technology companies, but fields as far ranging as agriculture to car manufacturing. This could indicate the growing demand for coding skills in various industries dependent on software-development, IT related or not.

Within North Carolina, the Raleigh metro area is already a major player nationally in generating tech jobs. In a study by Forbes, the Raleigh metro area ranks 2nd in the nation in technology job growth and ranks 1st in STEM jobs. Although Raleigh ranks 2nd in technology job growth, Raleigh actually has the fastest growth in technology jobs in the country. In response to the growing demand for STEM and tech jobs in North Carolina and projected inability to fill that demand with North Carolinians, the STEM Accelerator was launched to rethink and develop new programming to emphasize STEM to capitalize on the growth in STEM jobs in North Carolina.

Exposing kids early to code is not about creating an army of young coders, but promoting and teaching computational thinking. Computational thinking is the processes involved in understanding and solving problems in a way that an "information-processing agent" can carry out. Teaching students how to code is not necessarily the only way to provide that skillset; however, coding is a process of computational thinking. It requires taking abstract ideas and problems, breaking them down, and building towards solutions.

STEM Accelerator

The 2016 STEM Accelerator White Paper identified six recommendations for future STEM programs:

- Build teachers' content knowledge in math and science
- Expand recruitment efforts to attract more STEM professionals to the teaching profession
- Provide alternate and accelerated routes to teacher certification in STEM
- Infuse curricula with game design techniques to increase student engagement and motivation
- Provide students with opportunities for real-world application of skills through project-based learning

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- Develop a sustainable system of programs and resources for all STEM educators

Private and Nonprofit Sector Response to Growing Demand

With the growing demand for coders in North Carolina, several groups have created immersive courses to train coders and immediately link them up with high-paying jobs. Especially with coding, experience is potentially more valuable than attending a four year university to learn to code and these alternative education programs can provide a different route to entering the coding workforce.

- North Carolina's Coder Foundry: offers 12 week course for $9,900 and 18 week course for $13,900
- The Iron Yard: broader scope of courses available including programming, data science, and user interface design; 12 week courses cost $13,900
- Girl Develop It: nonprofit offers smaller 4 part and weekend courses for $80 dedicated primarily to providing affordable programs for adult women

So what else can North Carolina do to capitalize on the growing demand for STEM and programing skills?

- Introduce coding at a younger age and work towards reducing the gender and race gaps in coding
- Promote programs attempting to fill race and gender gaps in coding skills like Girl Develop It which has a Triangle branch
- There is evidence to suggest that we should not only target children to teach tech entrepreneurship, but older people as well considering that the average age of successful founders of technology companies was 39.
- Partner with groups like Code for America to engage locals in finding new ways to deliver government services and address challenges. Charlotte, Raleigh, and Durham are already participating in such programs. Learn more about Code for America and hackathons in John Stephen's blog post: Economic Development via "White Hat" Hacking?

The STEM Accelerator has only been launched recently in NC which has provided broad recommendations that have yet to be transformed into distinct polices. On a more local level, private and nonprofit groups have been attempting to fill the coding gap through immersive three to four month programs. However, recognizing the fast growth of tech and STEM jobs in North Carolina could prompt local governments to take their own action to promote coding and hackathon events as well as work with groups like Code for America.

Omar Kashef is a second-year graduate student seeking a dual-degree in Public Administration and Information Science and is currently a Fellow with the Development Finance Initiative.

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