The value of programming as an educational discipline goes far beyond the desire not to live in ignorance.

The audience needed a certain technological insight to understand The Agony and Ecstasy of Steve Jobs: The Musical. By itself, the show didn’t delve deeply into the nature of computing technology—it’s hard to imagine any event that includes a song called “Geniuses and Bozos” would be a place to discuss Boolean algebra or object-oriented coding. However, the musical illustrated how computing technology has altered the performing arts, and, more fundamentally, how it has restructured the way we organize ourselves.

At first glance, this was a modest fringe show, just an amateur musician and a small group of friends in the community room of a local library. Yet, the group had resources and a professionalism that many full-time musicians would have envied. The leader had acquired the script from an open access archive and analyzed the text with software tools to find the best places to insert songs. His composition program helped him create both the melodies and musical accompaniment for the show, and he circulated the music files to his cast over email so they could rehearse on their own schedule. His computer even allowed him to serve simultaneously as band and conductor at the first performance.

Music, of course, shares several skills with computer science. The earliest UNIVAC programmers recognized that the sequential nature of programming was similar to that of music and used this insight to create code that played music. The musicians of the 1970s realized that computers could analyze sounds and produce novel and expressive tones. Clearly, the musicians of our age have grasped the power of synthesis promoted by computing technology and commonly use digital methods to create everything from small-scale musicals on Steve Jobs to commercially available popular music.

So it’s appropriate that several musicians, such as the rapper Snoop Dogg and Black-Eyed Peas front man will.i.am, have added their voices to the group supporting Hour of Code, an effort to introduce children to the nature of programming. Hour of Code offers short tutorials on coding and asks professionals to spend an hour helping students work through a lesson.

As with many attempts to popularize technological education, Hour of Code has struggled to explain the benefits of learning to program. Those promoting the event mainly point out that there are jobs for programmers and that the strength of any nation depends on its well-trained technical personnel. Even the musicians involved haven’t strayed much beyond these points. will.i.am wrote that we “ALL depend on technology to communicate,” adding that, “none of us know how to read and write code.”

This statement is true, as far as it goes. Certainly, his support for the Hour of Code project will bring needed attention. However, the value of programming as an educational discipline goes far beyond the desire not to live in ignorance, just as it goes beyond the opportunity to take certain jobs or the need to protect our political economy.

Coding involves three fundamental activities that are the hallmark of the modern age: analyzing, sequencing, and synthesizing. It teaches us to break activities into little pieces, assemble a representation of those pieces in chronological order, and finally to assemble these elements into a complete system. Other human activities, including music, also involve these elements, but coding involves a rigor and universality that are present in few other settings. We might be able to teach analysis, sequencing, and coding through performances of a Steve Jobs musical, but we’ll probably have a broader impact if we do it through the technology that Jobs loved and used to organize his life.

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