

Digital Literacy: Global Challenge, Local Solution

The Digital Revolution is upon us and is exciting; with a cell phone, knowledge of the ancients, more than the libraries of Alexandria, Pergamum, Constantinople, and numerous others combined can now fit in the palm of our hands; and A.I., like ChatGPT, amaze us every day with new capabilities. The Digital Revolution has been called the third and fourth Industrial Revolutions (Wikipedia contributors, 2023). But as much progress as the Industrial Revolution brought, it didn't go down history without leaving scars to our collective psyche: that age of technology and productivity leapfrog was also fraught with dramatic inequalities and widespread human rights abuses, like child labor (Child Labor During).

With retrospect, we learned that quality and inclusive education would have helped citizens and societies fare much better during the Industrial Revolution. With a new tech-economic revolution fast approaching, how can we do better? Obviously, focus on education! This time around, instead of relying on education to repair the society, we need to educate people to prepare! Instead of educating merely for literacy, we need to educate for digital literacy, as part of UN Sustainable Development Goal #4 to ensure inclusive, equitable, quality education for all people (M. 2022). Just like literacy became a basic human right during the Industrial Revolution, digital literacy should become a basic human right for the Digital Revolution.

Clearly, digital education is a complex global challenge, a daunting task with many aspects: south hemisphere v. north hemisphere (Vogels, E. A. 2021); advanced economies v. developing economies; urban areas v. rural areas; communities with computers and broadband connection v.

those without, etc (Poushter & Poushter, 2022). But one aspect is often neglected: the “darkness under lamp” effect, where under the shining light of leading innovation centers during ages of dramatic technology advancement, a great number of people who can’t catch up with technological advancements live in the “dark”. Because of the rapidness of technology revolutions, the cutting edge of technical “haves” is too sharp, leaving the economic discrepancy between “haves” and “have-nots” particularly big. This in turn tears apart the social and economic fabric of the region and deprives many bright, young people of opportunities for the future.

This is not a new phenomenon; during the height of the Industrial Revolution, London was the heart of global technical and economic breakthroughs, but also the center of child labor, extreme poverty, and much ugliness as described vividly in many of Charles Dickens’ classics. And this phenomenon is starting to emerge now, such as in the greater Seattle-Tacoma metro area. Thirty years ago, this area was all just part of “sleepy Northwest”, but now there are clearly “haves” and “have-nots” in this emerging Digital Revolution. For example, according to 2021 K–12 Computer Science Education Data Summary Report, Bellevue School District offers 36 computer science classes taught by 24 CS teachers to 19,510 students v. 14 courses by 7 teachers to 28,676 students in Tacoma School District; even worse, about 50% of high schools in Washington state don’t offer computer classes (K-12 Computer Science Education). But students who learn computers in high school are more than 3 times as likely to major in computer science in college and much more likely to graduate. The opportunity cost is immense: “In Washington, there are currently 16,354 open computing jobs with an average salary of \$112,623”. If we could fill these positions with a diverse group of people, it would not only provide annual income of 1

billion dollars to workers (Support K-12 Computer), but also help disadvantaged groups gain footholds in the digital era .

Our organization has created a dedicated program to help solve this challenge, starting from the Seattle-Tacoma metro area. Firstly, we will run campaigns to educate local communities. We will build awareness of the importance of computer education, and organize to advocate and educate, potentially through PTA-hosted education/information events. It is also important to build alliances with local/regional businesses to sponsor and contribute.

Secondly, we help students like computer science. The old saying goes, “Where there’s a will, there’s a way.” If students actually like it, they’ll be more likely to learn it. An important way is to help schools found computer clubs, and let students fully immerse themselves in the experience. Another way is to sponsor ‘digitrucks,’ movable classrooms to provide opportunities to experience computer education.

The third step is to make sure that there are teachers for computer education. A creative way to address the lack of qualified teachers is for more well-off school districts to offer their classes online, allowing those in less privileged districts to access the same resources, albeit in a slightly inferior format. This could be accomplished through a variety of means, such as offering classes through a shared online platform or creating a system of inter-district cooperation. Or, teachers could be incentivized to go to less well-off school districts. Teachers at the less well-off districts would answer any questions, and provide hands-on coding experience. This solves the passiveness of online classes, which has always been an important problem of this type of online learning (Ducan, C. 2020).

With the success of this pilot program, these methods could be rolled out to other national and global technical centers. Also, with the best practices and guiding principles gained through this program can be integrated into other programs to bridge the daunting challenge of global digital divide.

As time runs on, more and more lessons are added to the books of history. We can use these lessons, now, to make this digital transition one of hope and success, rather than failure and desolation. We can work together to ensure that the right of digital education is fulfilled, and each person has the opportunity to pursue this path. Perhaps, we, too, will go down in history, a success, inspiring and lighting the way for future generations. Only time, and action, will tell whether We May Triumph. This is a fast-changing world, and we strive to leave no one behind.

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