HOW THE PANDEMIC IS HIGHLIGHTING THE NEED FOR DIGITAL SKILLS

Working from home and remote learning feel like an inevitable part of our new normal, especially now that some countries are trying to reopen their economies after more than a month of lockdowns and stay-at-home orders.

For those who continue to work from home or choose remote learning, there is a need to improve and enhance digital security and tech skills.

ADAPTING TO THE NEW NORMAL

Going back to the old normal is not feasible in the foreseeable future as experts predict that the pandemic is likely to last for months or perhaps years to come. That means we must adapt, and one of the ways we can do that is through technology.

As many aspects of everyday life become increasingly dependent on digital technology, demand for digital skills also increases. Professionals, educators, and students alike are now required to learn and use various digital platforms in order to sustain their roles or their learning.

This could include using previously unknown online platforms or learning new skills like creating infographics, editing videos, and computer programming. For instance, educators who might not traditionally have been that tech-savvy must learn to adapt and innovate in using digital tools for remote teaching.

DESIGNING DIGITAL SERVICES DURING COVID-19

Learning new digital skills is not limited only to individuals. It also includes companies, educational institutions, and government agencies. As the pandemic

continues, the dynamics of the business and education landscapes are also rapidly changing.

Designing digital services has become a critical skill, one that is highlighting not just the need for people with a STEM background, but also for people with strong communication and collaboration skills. That's because digital services need:

1. To focus on the user – for example, if you develop an app that helps facilitate product delivery, it needs to work for the people using it. Key skill: critical thinking

2. Decisions based on data – it's important to be able to understand and analyse data to come up with a great design that solves any problems your users have. Key skill: problem-solving

3. To avoid vague language – digital platforms need to be clear in what they're delivering and how to use them. Key skill: communication

At Arduino Education, for example, we have created a specialist electronics and coding kit that's *designed to help students learn at home*. To do this, we had to work collaboratively, figure out how to produce the kit quickly enough to meet educator, parent, and student needs, and then ensure that everyone knows about this new kit. The kit itself teaches students the skills that we have found so necessary during this time.

WHY DOES TECHNOLOGY DEVELOP MORE QUICKLY DURING A CRISIS?

As the saying goes, "necessity is the mother of invention." Many great innovations in history have been motivated by crises, particularly wars or the threat of wars. One very prominent example is the space race between the two superpowers, the US and the former USSR, during the Cold War (1947-1991).

The Cold War also motivated many technological leaps not only in terms of space exploration and weaponry but also in terms of computer science, computer networks (from the Advanced Research Projects Agency Network to the internet), communication satellites, and nuclear power.

Unlike the Cold War, however, the crisis that we are facing now is resulting in wider cooperation between countries across the world, particularly in the race to find effective treatments and vaccines for COVID-19. We all now have a common enemy. Aside from the medical aspects of the pandemic, many innovations have been

achieved in digital and communication technology as the *world economy shifts its paradigm.*

THE DIGITAL DIVIDE

The pandemic is also highlighting a digital divide, with many students without access to a computer or tablet device at home. According to a 2019 *Pew Research Center survey*, about 73% of Americans have high-speed internet at home but in rural areas, the average is only 63%. This means that many American households are not ready for working-from-home or remote learning.

This digital divide is not only about internet connection and hardware but also about knowledge and skills. Many workers, including those who have office jobs, are not sufficiently skillful when using digital and online tools. Many educators are also learning to be more proficient in using tools and technology in their lessons.

INNOVATIVE USES OF TECHNOLOGY WE HAVE SEEN

As the pandemic continues, many existing technologies are being put into good use. Some new technologies have also been developed either as a direct or an indirect response to the pandemic. Here are a *few examples of innovative uses of technology*:

- 3D printing – now being used to print medical equipment, from PPE to components of affordable ventilators

- Hands-free door openers – with hygiene a primary concern, doors into public buildings are potential vectors for the virus. The demand for hands-free door openers that can be retrofitted to any door is now high, and various designs have been developed

- Digital contact tracing – phone apps, facial recognition software, body temperature scanners, RFIDs, and AIs are now being used for real-time contact tracing of possibly infected individuals. Governments are collaborating with private communication and tech companies to facilitate monitoring of the pandemic

- Digital education platforms and tools – educators and parents are now using digital platforms such as Google Classroom and Microsoft Teams, and digital/physical *educational kits* are providing hands-on lessons.

- Remote working tools – many collaborative tools and open-source digital resources are now being utilized at home, from teleconferencing to online classes.