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Technology transforming everyday life, future

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Technological disruptive change is becoming a compelling force in our society. Every public institution and economic sector must accept and embrace the need to be adaptive and flexible to embrace technological advancements as opportunities. The pace of change is fast and no one wants to be left behind.

Experts use the phrase disruptive change to describe how advances in areas such as technology change the way people have always done things. Just what are the technological disruptive changes, taking place now, that will shape our future? Listed below are a few that we need to be aware of:

1. **Adaptive Manufacturing** - Also known as 3-D printing, this technology uses a digital map to print solid objects in layers of many materials. Individuals can use a 3-D printer to make household objects. A 7-year-old girl who was born missing three fingers on one hand is looking to make history by throwing out the first pitch at every Major League Baseball game – using her 3-D printed hand. This 3-D printing will cut construction time for some structures from years to months.
2. **Artificial Intelligence** - Human intelligence processes such as learning, reasoning and self-correction will be facilitated by machines. This will allow for virtual assistants or advisors who will act as knowledgeable workers.
3. **Autonomous Vehicles** - Tech and car companies are promising to deliver self-driving consumer vehicles by 2025. While traffic infrastructure, safety and legal restrictions will slow changes, this no doubt will disrupt longstanding transportation sectors such as trucking and taxis.
4. **Digital Currencies** - Known as Bitcoin, this virtual currency – money that exists mainly as computer code – is being used for person-to-person online transactions.
5. **Machine Learning** - This type of artificial intelligence enables computers to learn without being programmed. It adapts and evolves, just by being exposed to new data and information. Examples include speech and handwriting recognition to self-driving systems that recognize objects and topography on the road.
6. **Next-Gen Genomics** - More precise science will be used for imaging the units that make up DNA with rapidly advancing computational and analytic capabilities. This could potentially improve health and human longevity.
7. **Software Robotics** - These office robots will automate tasks that humans normally do, such as analyzing entries, writing responses, booking tickets and conducting research. Armed with voice control, they will be efficient office assistants.

Because technology and automation is disrupting much of our traditional framework of work skills, our talented public school teachers are challenging students to think and develop in-depth understandings as they apply their academic learning. Career

success in the future will depend less on what students know and more on their creative skills and dispositions. Because much of manual work is being automated, students are learning to be creators, inventors, designers and entrepreneurs. They are learning the value of taking risks, being resourceful and exhibiting ingenuity and enterprise. We're not just preparing students for careers that don't exist yet, we're preparing them to be adaptive and skilled at changing their work as technology makes new frontiers possible.