Looking Ahead

I consider myself a lifelong learner. Consequently, in spite of recently retiring from education and completing my master's degree, learning doesn't stop for me. Given my passion for technology and education, I rely on the International Society for Technology in Education (ISTE) to stay current. Three ideas from their article entitled "The 9 hottest topics in edtech," computational thinking, augmented reality/virtual reality, and artificial intelligence, hold a particular interest for me because they are concepts with which I currently have the least experience.

Computational thinking (CT) draws on skills such as algorithms, decomposition, pattern recognition, analysis and abstraction to solve problems in any area, not just programming computers. When applied to education, the idea of students and teachers approaching non-programming problems with a programmer's logic and strategy seems beneficial in much the same way design thinking is applied to areas outside the traditional domain of design. I also appreciate the correlations between computational thinking and skills described in my white paper on teaching creativity, including pattern recognition and abstraction. Just as I enjoy mixing technology and art, I would like to learn more about applying CT to non-programming problems. Fortunately, Google provides multiple resources to get me started. First, Google for Education offers a "curated collection of lesson plans, videos, and other resources on computational thinking." Second, Google also offers a free online course entitled, "Computational Thinking for Educators." I suspect these two resources will help me decide whether CT is something I wish to further explore.

As a lifelong science fiction fanatic, augmented reality, virtual reality, and mixed reality (generally referred to as xReality or xR) have held my fascination for many years. Augmented reality (AR) is technology that superimposes a computer generated image (CGI) over one's view of the world. Virtual reality (VR) engulfs a person in a computer generated environment via a helmet with screen, headphones and sensor gloves. Mixed reality (MR) falls between AR and VR in that it also superimposes CGI over a person's view. However, MR imagery is anchored to and digitally interacts with the real world. I'm excited by xR's opportunities for learning beyond the traditional classroom model making it far easier for situated and embodied learning to take place. Likewise, xR can further individualize a student's academic experience. Perhaps most exciting is that learning need no longer be tied to a physical classroom. Employing xR, students from around the world can collaborate, engage with one another, or take advantage of a wide range of cultural and educational opportunities all without leaving their schools. Several resources exist for ideas on how best to leverage this new technology. The EdTech Times posted a 10 session podcast series on SoundCloud titled, "xR in EDU." Also, Jaime Donally's book, "Learning Transported: Augmented, Virtual and Mixed Reality for All Classrooms," is due out in March, 2018, following up on an excellent short article she published on the ISTE website titled, "5 ways to move from experience to creation in AR, VR."

My third goal, artificial intelligence (AI), encompasses a broad range of application possibilities. AI is the capacity for a computer to perform tasks normally associated with humans, such as reasoning, decision making and even learning. Much like xR, AI has the potential to radically

change education. For example, AI systems enable a shift in the teacher's role from content delivery to learning guide. Adaptive learning AI systems can individualize student lessons via ongoing formative assessment, freeing up valuable time for educators to focus on higher order thinking and creativity. Artificial intelligence eases the administrative burden within a school by helping manage and manipulate the tide of data generated by students, teachers, parents and others to improve education. While Google offers a simplified look at what artificial intelligence can do via their Teachable Machine project, learning the Python programming language might be a good place to start due to its extensive use in AI platforms. Codecademy, Python.org, and even Google offer free lessons on learning Python. Plus, there are multiple online courses for studying the applications of AI. Columbia University teaches a free course via edX on the fundamentals of artificial intelligence, and the Open Academy offers a free MIT course on artificial intelligence.

If I've learned anything in life, it's that regardless of my plan, the universe makes clear what it has in store for me. Therefore, I stay ready for whatever life throws my way by continuing my learning. These three educational technology goals are an excellent extension of that practice.

Kevin J. Burgam
February, 2018