

## Contemporary classroom innovation: exploration

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### ABSTRACT

Today's students expect more than lectures more from higher education. Contemporary students are searching for the education they need to advance in the workplace, though they want their education to be engaging, applicable, and relevant to the real-world. Technology and innovation are in the news almost every day and people automatically think about their phones, computers, and self-driving cars. Innovation is the "the design, invention, development and/or implementation of new or altered products, services, processes, systems, organization structures or business models for the purpose of creating new value for customers" (DasGupta, 2017, p. 345). Innovation keeps businesses relevant and successful. Having an innovative organizational culture is becoming vital to the success and relevancy of business and thus, in education today. In secondary and post-secondary education, usage of technology has increased dramatically in online education. This paper and will explore the iterative process that the researchers are taking toward incorporating innovation and technology into the classroom.

Keywords: Higher Education, Innovation, Online

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## INTRODUCTION

Technology and innovation topics are in the news almost every day, causing thoughts about human interaction with phones, computers, and self-driving cars. How we live and learn has changed dramatically in the last two decades and changes do not seem to be slowing. From flipped classrooms to virtual reality, learning is now much more than a lecture. With millions of students entering secondary education in the next decade, innovation will be needed and desired to keep higher education relevant. DasGupta (2017) defines innovation as “the design, invention, development and/or implementation of new or altered products, services, processes, systems, organization structures or business models for the purpose of creating new value for customers” (p. 345). Key points on this topic include:

- Innovation is what keeps businesses relevant and contributes to the success of an organization.
- Creating a culture of innovation is becoming vital to the success and relevancy of business and in education.
- Secondary and post-secondary education have increased the usage of technology to support demand the changing student demographic.
- There are multiple offerings of applications, augmented reality and other innovations that can prepare students for their professional careers.

Institutions of higher education should explore and implement new technologies in the classroom, both in the seated and online environment. Education and organizational development professionals are increasing the use of technology such as videos, podcasts and augmented reality for their students, employees and customers. This paper will focus on research, trends and technology that institutions are taking toward incorporating innovation and technology education and training.

## BACKGROUND

Less than 50 years ago, homes installed telephone service that included equipment such as a wall phone unit with rotary dial, a cord and a party line feature. Telephones today include various technological advances which feature new cellular and mobile phones having security options such as thumb print or retina access along with a digital camera that takes editable pictures where consumers can include augmented reality on video or still pictures. Many cell phones hold more data and run faster than many desktop computers. Many phones, especially smart phones, are used for internet access rather than calling others. It is imperative that higher education utilize these new technologies and ways of being.

Innovation is what keeps business relevant and contributes to the success of an organization. Those organizations which have not embraced mobile technology may not sustain success. One can think of Blockbuster as one organization which did not innovate and ultimately failed. Innovation is “the design, invention, development and/or implementation of new or altered products, services, processes, systems, organization structures or business models for the purpose of creating new value for customers” (DasGupta, 2017 p. 345). Innovation must add value to the organization. Our research will focus on this part of the definition and how innovation is currently impacting higher education and predictions of the future impact.

## CURRENT TRENDS

The college student demographic is changing. While students used to be primarily traditional students with affluent backgrounds from 18 to mid-20's, today's students include working and older adults who are returning to finish the degree they started or to attain a graduate degree to enhance promotion opportunities. This means students may be demanding, wanting to ensure their money is well spent, that they are learning what they need to be successful and are learning in an engaged environment. Most students do not want and do not expect the traditional lecture or "sage on the stage" where a professor stands at the front of the classrooms and talks for the entire class period. Online students will often ignore these types of lectures or multi-task while listening. They will often be watching television, texting or both while they study.

Wlodkowski (2008) stated that students are looking for instructors that have

- Expertise
- Empathy
- Enthusiasm
- Clarity
- Cultural responsiveness

Generational differences are also being considered in the learning environment with the offering of in-seat courses, online and hybrid formats. The seated classroom has had an increase of older working adults taking courses, which makes it a challenge for the instructor, and the university to offer a variety of course formats and engage a diverse student population within the courses. To get a better understanding of diversity in the classroom refer to Figure 1: Generations and Technology, which depicts the various generations that are attending college courses today.

Generation Z, those born in 1996 or later, comprise 26% of the United States population. This makes them even larger than the Millennial Generation before them – almost 1 million more Generation Zs (UPCEA, 2018). Online learning is an easy transition for this generation as many already use online tools in the K-12 classroom. These students are used to using technology in various ways to learn. Creating a culture of innovation is becoming vital to the success and relevancy of business and in higher education.

## FUTURE TRENDS

Secondary and post-secondary education has increased the usage of technology dramatically over the last decade to include expanding into the online environment, use of videos and other technology in the classroom. It is a norm to see YouTube or Ted Talk videos in the seated and/or online classroom today. Many instructors develop their own course videos and share these with students. There are a variety of businesses that offer technology services such shown in Figure 2: Anime Instructor Introduction, and tools for students to create and upload videos.

Ucroo is a social platform for student engagement in clubs, honor societies and other student activities at the university level (Haslem, 2014). Students will expect this digital option as they already have access to their online courses via a learning management system application (APP). Ucroo is mobile and web based that can be integrated with learning management systems where students can engage and be better connected to school clubs, groups, committees, etc. that

can enhance their social experiences. Ucroo can be used to connect students interested in internships, mentor programs, study abroad, honor societies, and other opportunities. It is easy to use for those older students who may use similar tools like Slack or Basecamp at their jobs.

Artificial Intelligence (AI) in all forms are getting bigger in 2018 and beyond. Today we are used to talking to Siri, Alexa or Google Assistant and prices are affordable – as little as \$50 (Boller, 2018). Chatbots have been playing songs for us, providing directions on our GPS, turning up the volume, check our credit card balance, schedule meetings for us and set our alarm clock. Tech Analysts and Learning Development specialists are exploring how chatbots can help us learn in the future. Many universities are already using AI in the classroom. California State University recently won the 2016 EdTech Innovation Award for use of conversational AI to help student's use of language in the business environment. Using AI students will respond to interactive questions and tutorials where they will answer open-ended questions that will be automatically graded to provide richer learning analytics and proficiency measures (Distance-Education, 2017).

Today's researchers are focusing on how to use AI to do more sophisticated data analysis, spot trends and other automated tasks (Boller, 2018). For example, an instructor could use the trend analysis AI software to help students predict future trends in the business or in an industry in which they want to pursue a career. In addition, virtual reality can be used in classrooms to stimulate skills that are often hard to learn, such as empathy. Stanford is one institution that has been studying the impact of virtual reality on how students feel and respond (Shashkevich, 2018). This type of innovative teaching may significantly alter how many courses are taught in courses for nurses to managers.

### **“SO WHAT” FACTOR**

Higher education institutions will need to adjust the way they attract, teach and engage students in the future to remain relevant. Millions of students of various ages and experiences will be entering colleges and universities in the next decade. Many of these students will be attending class in the online environment and expecting to be engaged. Some students will expect a gaming environment to help them understand the subject matter and practice the critical thinking skills needed to meet professional goals. Statistics that support the efforts of expanding and enhancing technology in the education environment include that by 2030 there will be

- An estimated increase of nearly 120 million students in higher education and 23 million internationally mobile students
- 4.3 million – a one percent annual increase (non-traditional) students in ages over 24 between 2015-30
- 30% of students in STEM studies and 28% in business, administration and law (UNSECO Institute of Statistics, 2018)

Students from the Millennial and Z Generations have always had a smart cell phone and advanced technology in their lives. The students that enter the classroom in the next decade will be used to using their hand-held devices in a variety of ways including to keep up with social media, research information on products and services, to shop, etc.

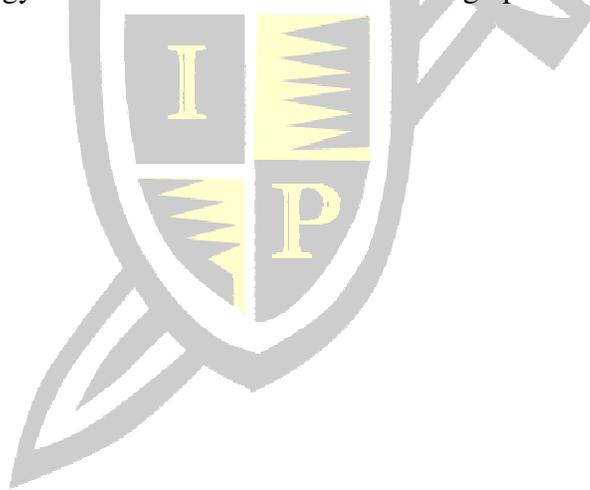
Technology will impact future job opportunities for students. Healthcare is already seeing the use and impact of 3-D printing and many industries are using data mining and

predictive analysis along with radar and signal processing and other new technologies. See the impact in Figure 3.

Using the predictive analysis such as the information contained in Figure 3, can assist in relevant curriculum content that is needed for students that will face these future challenges in the workplace. Many countries are experiencing a shrinking traditional college-going population while contemporary students, those over the age of 24 are expanding (Choudaha, 2018). Lesser developed countries are bringing in English taught programs and others are focusing on digital and technology improvements which open up new modes of providing and unbundling course objectives. Some experts feel that there is a major transformation taking place in higher education with population shifts and emerging countries wanting convenient education centering on digitalization and automation.

In 2015, Yun-Ketang, one of China's largest internet companies "issued more than 10,000 courses, covering 16 majors, and 18 teaching fields" (p. 61), which had over 17 million registered users in 2016 (Shi & Yu, 2016). Though MOOCs have not been as popular in the United States, it is a viable option for students in China with over 980,000 taking the College Oral English Course. In the US, completion rates for MOOCs hover around 5.5% (Ahearn, 2017), likely because students do not remain engaged.

It is important to the new contemporary student and to the universities that will support them in the future to offer a variety of learning platforms and options to remain relevant. Innovation and technology will continue to be a vital learning option for students of all ages.



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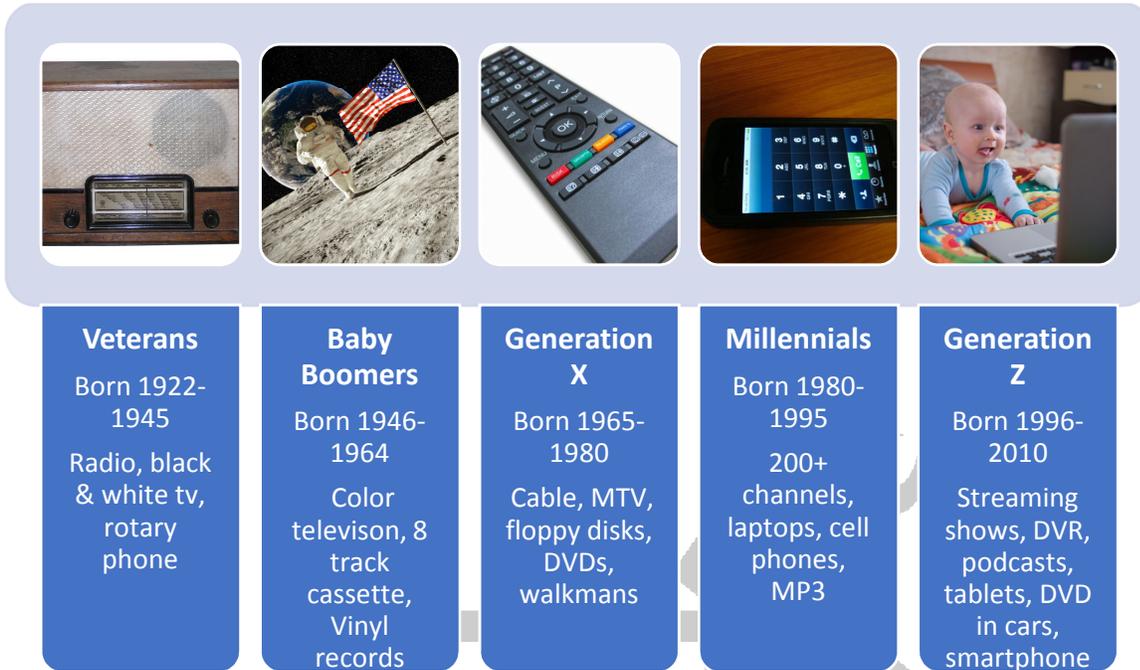
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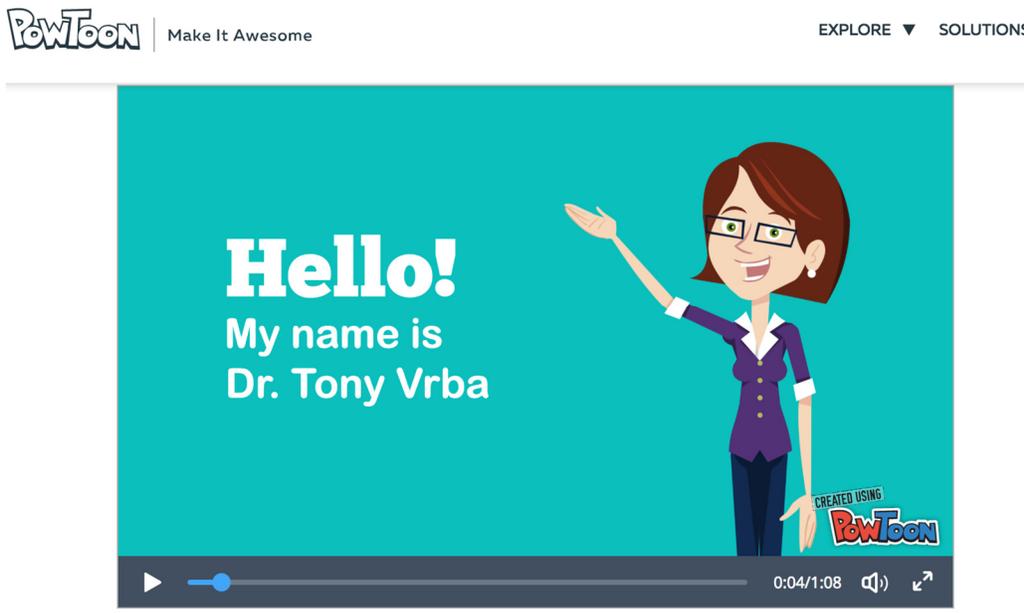
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**TABLES AND FIGURES**



*Figure 1: Generations and Technology*



*Figure 2: Anime Instructor Introduction*

<u>Impact Felt Already</u>	<u>2015 – 2017</u>	<u>2018 – 2020</u>
Mobile internet and cloud technology Advanced in computing power and Big Data Crowdsourcing Young demographics in emerging markets Changing work environments Flexible working arrangements	New energy supplies and technologies The Internet of Things Advanced manufacturing 3D printing Longevity and ageing societies New consumer concerns about ethical and privacy issues	Advanced robotics and autonomous transport Artificial intelligence and machine learning Advanced materials, biotechnology and genomics

*Figure 3: Technological Drivers of Change – Future Jobs Report*

