Workforce Development: The Video Game

Influencers, Innovators and Gamers Collaborate to Bolster STEM Initiatives

Matthew Jaster, Senior Editor

I grew up playing video games in the 1980s/1990s. Today, my kids not only play video games, but could discuss coding, designing, and marketing at length on their YouTube channel. This generation is growing up with technology no other generation has ever had.

It's no surprise that academic institutions are starting to see the value in tapping into this generation's experience from a workforce development perspective. If we train enough coders, software developers and content creators, how many of these students might use these skills on a manufacturing floor after high school?

According to the Space Foundation, one of the most important components of STEM academics and careers in STEM is the ability to learn by trial and error; confidently theorize certain solutions; put them to the test; and record and process results. Students who engage with robotics can learn these important elements of STEM, which will benefit them in future projects.

It's suggested that robotics, automation, and software careers will draw kids that have put the hours into technology and science from an early age whether its LEGOs, video games, board games or engineering puzzles.

But can all that "button-mashing" experience with an Xbox or Nintendo provide real value down the road?

In a medical study conducted by the National Library of Medicine, 30 medical students between the ages of 24 to 26 were divided into two groups (gamers vs. non-gamers) and performed a simulated surgery using VR equipment. The gamers significantly outperformed the non-gamers in many of the metrics needed to successfully perform robotic surgery.

The National Science Foundation provided LEGO robotics kits to summer campers that included game design software and motion control capabilities. The purpose of the two-week summer program was to field test the double effect of teaching both gaming and robotics to improve students' spatial visualization and computational thinking skills.

Future First Gaming (FFG) is a *stem.org* accredited company that convenes esports enthusiasts to engage in competitive and recreational gaming events, fosters a gaming community and presents opportunities for participants to explore educational and career development pathways in science, technology, art, and relevant esports disciplines. The company offers technical training in areas like coding, business management, game design and content creation.

The *Ready or Not* manufacturing simulation game developed by the Oregon Manufacturing Extension Partnership (OMEP) is a live, interactive experience set in a hypothetical manufacturing business that you control. The game teaches critical skills and lessons in an engaging, exciting format that delivers valuable training, team building, and insights.

Finally, the College of Professional and Continuing Education in Long Beach, CA, reported that the US federal government has also taken an interest in the use of simulation to build job readiness in a future workforce. In recent years, these games incorporated virtual reality technology to create life-like simulations of high stress events to practice for situations that can be difficult or costly to practice in a hands-on manner.

We do not need to raise a generation of kids glued to their smartphones, tablets, or gaming computers, but research suggests a couple hours of *Minecraft* a week may not be such a bad thing for the future of manufacturing.

Future First Gaming at an event in Las Vegas.

Resources

futuresfirstgaming.com/workforce
nist.gov/blogs/manufacturing-innovation-blog/turn-work-play-ready-or-not