In this session, learners will analyze the attributes of digital learning games and uncover their potential for deep and engaging learning with students.
In business, gaming and simulations have found a foothold in training programs. Companies such as Cold Stone Creamery and Miller Brewing Company are using digital games in their employees’ training programs. With the assistance of these digital-game based training regiments, bartenders are able to pour beer with less froth; and creamery employees can mix the perfect sundae. Other corporations are using games or gaming scenarios to train staff in customer service, job skills, problem solving, or stress relief.
The digital generations are vastly different than previous generations. They consume media as if it were sustenance, because to them it is.
Common Sense Media surveyed over 1,000 teens (ages 13-17) to spotlight their digital and social media diet in a day. Over 68% of the teens texted, 51% visited a social networking site, and 23% used at least two different types of social media in a single day. They have the opportunities at home to connect to friends through social networking, playing video games, texting, emailing, or creating multimedia products.
In-game interactions are constantly challenging game players to think fast and make informed decisions. The various challenges and tasks stimulate players and force them to think or fail (and even their failures are rich learning opportunities). When designers create new video games, they intentionally design them to require the players to make a decision every 1/2 to 1 second - and they ensure that players are rewarded or punished for those decisions every 7 to 10 seconds; that’s immediate gratification and reward.
Dr. Judy Willis, an educator and neurologist who specializes in brain research identifies dopamine, a neurotransmitter released during tasks involving mental challenge, as a major contributor to video games’ popularity with players. The dopamine release comes each time the game provides feedback that the player’s actions or responses are correct.

The player gains points or tokens for small incremental progress and ultimately the powerful feedback of the success of progressing to the next level.
“Computer-based games provide simulations that often mirror cognitive functions in the brain. Humans think and learn through experiences they have had and via simulations they run in their heads based on those experiences, much as if they were playing video games in their head” (Gee 2007).
“Good video games give people pleasure. These pleasures are connected to control, agency, and meaningfulness. Good games are problem-solving spaces that create deep learning.” (Gee 2007)
Digital gaming mirrors how humans think and how the mind works. People envision simulations in their head before action – games emulate this mental process.

They are extremely popular and generate over 80 billion dollars in global sales.

They are fun, immersive and highly motivating. They provide constant feedback and reward.

21st century learners prefer 21st century methods of learning.

Some games provide the opportunity for independence – the players depend on themselves to win.

Game design utilizes multiple intelligences- visual, auditory, intrapersonal, linguistic, and even kinesthetic now.

Games are versatile platforms for learning. Storylines and gaming experiences are flexible and can teach anything.

Collateral learning occurs easily. Students learn without realizing they are learning, because it is situated learning.

Games are safe alternatives to reality. It is acceptable to fail.
Many games now ask players to collaborate and problem-solving
STIGMA - Video games have a negative stigma attached to them because some of them are too violent and lack any redeeming qualities whatsoever. But that is only a small percentage of games. Teachers shouldn’t use games such as Grand Theft Auto V and Mortal Kombat with their students. These titles have mature ratings for a reason. But, for every game that is deemed inappropriate, there are dozens more that will meet the approval of teachers.

MONEY - has always been a barrier to the adoption of new technologies and approaches in the classroom. To combat this, school leaders must embrace and fund new programs with compelling evidence of success. Digital game-based learning has worked for the military and big business because it has the means to augment training programs and to sharpen skills. It is education’s turn to reap the benefits.

TIME - The time demands associated with teaching are overwhelming and often teachers sacrifice their time for professional growth for other classroom responsibilities. Teachers are also concerned with the amount of instructional time non-traditional forms of instruction such as digital game-based learning use. Time is well spent when students are engaged in deep learning and hard work. Teachers should choose to find the time for such a promising instructional practice.

PROFESSIONAL DEVELOPMENT - Teachers experiencing new approaches and strategies need help and guidance through the process. Where can a teacher get the help? In the current state of overtesting, intense accountability, and financial challenges teachers and school leaders struggle to address staff development and professional growth. School leaders must advocate for teachers to participate in professional growth initiatives. Likewise, teachers must explore new avenues to reach the students of today.
Thousands of available browser-based digital games are available for gamers to use and learn from. When searching, use careful and deliberate search terms to narrow your search to valid result hits.
The original Angry Birds can be used to teach physics. Developer Rovio subsequently worked with NASA on the micro-gravity used in Angry Birds Space to improve its educational value (if you can ignore the exploding pigs in vacuum). That collaboration reached a new orbit with the landing of the Mars Curiosity rover and the release the same month of an Angry Birds Space: Red Planet update with explicit links to NASA educational content about Mars.

Newton’s Laws  
Numeration  
Data  
Experimentation  
trial and error  
strategic planning,  
Parabola  
Trajectory  
cause and effect  
the scientific method,  
goal commitment
In theory and practice, digital games can be used in most aspects of instructional lessons.