Type	Who	What	When	Where	Why	How	Considerations
Simulations Involving Virtual Technologies							
Telesimulation - Live simulations facilitated virtually (e.g. by web conference)	A facilitator or simulation champion enacts the simulation at the recording location. Facilitator Lead, co-facilitator, two participants to enact the scenario that is being recorded, one manikin or standardized participant Recommend no more than 4 active participants and 2-4 observer roles (maximum of 8 students per VS).	Virtually facilitated case scenarios	Synchronous	Coordinated/facilitated from an onsite location using existing technology and an internet connection.	Conduct and deliver synchronous and in the moment scenarios to any type of experiential learning activity	Live streamed out to students using an online platform. Facilitator lead would provide pre-brief, deliver scenario, and lead debrief. Whereas the co-facilitator would assist in the debrief, monitor chat box and respond to verbal responses throughout simulation.	Cost and staffing requirements need to be considered as the staffing complement could be higher in this delivery method.
Immersive Technologies							
CAVE – Cave Automatic Virtual Environment - Fully Immersive Virtual Reality	Facilitator Lead Recommend no more than 1-2 active participants and possibly 1-3 observer roles (maximum of 4 students per VS). Other considerations may be that there are only 2 participants in each VS and no observers.	Immersive virtual settings allow users to control how they view the environment and users can change aspects of the camera position and orientation. This technology has high-resolution (hardware and software) capabilities and is often very life-like in the virtual space or digital representation. An example of fully immersive VS is a flight or space simulator or surgical procedures using large medical equipment.	Synchronous	Home base or location where the students need to come to in order to use the equipment.	Students can interact with the facilitator and the environment at the same time.	This type of VS has a home base or location where the students need to come to in order to use the equipment as it includes visuals, auditory, and haptics that are virtually generated.	Because the equipment is a fixed asset, and stationary the cost usually is absorbed by the organization or location where the equipment is housed.
Semi-Immersive							
Virtual Reality (VR)	Can be facilitated or moderated by an educator or it can be offered as an asynchronous activity depending on the platform that is chosen.	This technology utilizes a head mounted device or an android phone adaptor (cardboard goggles). Tethered or non-tethered. Articulated details increase the learning possibilities.	Synchronous and/or Asynchronous delivery methods	A large open area is required for the safety of the students to practice the scenarios. Minimum of 2M x 1.5M (6.6ft x 5ft) for a comfortable tethered experience.	Students can interact with the facilitator/moderator and the environment at the same time in the VS.	The capabilities include the integration of 3D video and aural feedback and involves some haptic technology in the form of vibration or audible sounds with placement of certain objects in the experience.	This technology is readily available and can be purchased by the individual or the organization. For the most part these devices are user friendly and easy to use. Drawbacks to this delivery method in relation to the possibility of cyber sickness

							and the inability to replicate all senses for the learner. Cost of headsets and space need to be considered as there would be a mid-range cost to organization to purchase enough headsets for all students
Augmented Reality (AR)	Facilitator Lead Recommend no more than 1-2 active participants and possibly 2-4 observer roles (maximum of 4-6 students per VS).	This technology utilizes a head mounted device. Tethered or non-tethered.	Synchronous	A moderate size open area or an area that includes a stretcher and/or manikin is required for the safety of the students to practice the scenarios.	This type of VS may be utilized when the facilitator wants to expand the existing surroundings with other aspects or information through a device, haptics or speakers.	AR is often used to assess voice commands, communication techniques, or face recognition through different types of hardware, including mobile or wearable technology. Mobile devices can be used although this can limit the visual field for the facilitator	AR collects various types of data about the real environment that include video (cameras), audio (microphone), location (GPS or triangulation), and motion (Wi-Fi or Bluetooth) in which the facilitator needs to monitor and have knowledge about Depending on the delivery methods (i.e. head mount, android phone (AR app scanner), or simulator based) cost can be variable for the individual or the organization.
Mixed Reality (MR)	Facilitator Lead Recommend no more than 1-2 active participants and possibly 2-4 observer roles (maximum of 4-6 students per VS).	This technology utilizes a head mounted device. Tethered or non-tethered.	Synchronous	Most often students would need to be in a classroom location or simulation lab and interacting with the VS using the technology to emulate the interaction with the 3D object or simulator.	MR is used when the intention is to interact with computer-generated objects in 3D.	This is also known as a hybrid reality where the facilitator would need to be present during the delivery of the VS.	Drawbacks to this delivery method in relation to the possibility of neck stiffness and the inability to replicate all senses for the learner. The visual field varies for each individual. Cost of headsets and space need to be considered as there would be a mid-range cost to organization to purchase enough headsets for student use.
Screen-Based Simulations							
Virtual Worlds	Facilitator Lead or monitored dependent of time. Recommend for small or large groups of students.	Using a 2D/3D screen based VS includes the use of virtual patients and virtual worlds on a computer versus a headset.	Synchronous or Asynchronous	Due to the ubiquity that almost every learner has access to a computer, laptop or mobile device, this is	Can be used with just-in-time-training and self-guided learning but usually requires a facilitator	Using a 2D/3D screen based VS includes the use of virtual patients and virtual worlds on a	Disadvantages are typically related to cost of individual licenses or technical problems by the facilitator or the learner.

| | | This option allows the facilitator to track, store, and analyze performance data of the students/learners.

Often they consist of an avatar(s) in an already designed or developed scenario with limited availability to change the learning outcomes for the specific premade scenario. Patients or participants are static but can also be interactive.

Virtual world on the screen can be adaptable with some programs allowing for maneuverability of the avatar in response to any interaction with the user. Fidelity can be limited in this type of delivery. | | one of the most common facilitated methods as it can occur anywhere in any location with these devices. | to debrief or supervise the learner. | computer versus a headset. | Cost can be variable based software fees and hardware needs of the organization. |
| Virtual Patients/Virtual Gaming Simulation | Facilitator Lead or monitored dependent of time.

Recommend for small or large groups of students. | Using a computer, laptop or tablet/screen based VS includes the use of virtual patients and virtual worlds on a computer versus a head set.

Often they consist of an avatar(s) in an already designed or developed scenario with limited availability to change the learning outcomes for the specific premade scenario. Patients or participants are static but can also be interactive.

Virtual world on the screen can be adaptable with some programs allowing for maneuverability of the avatar in response to any interaction with the user. Fidelity can be limited in this type of delivery. | Synchronous and Asynchronous | Due to the ubiquity that almost every learner has access to a computer, laptop or mobile device, this is one of the most common facilitated methods as it can occur anywhere in any location with these devices. | Can be used with just-in-time-training and self-guided learning but usually requires a facilitator to debrief or supervise the learner. | Screen based VS includes the use of virtual patients and virtual worlds on a computer versus a headset. | Cost can be variable based software fees and hardware needs of the organization. |