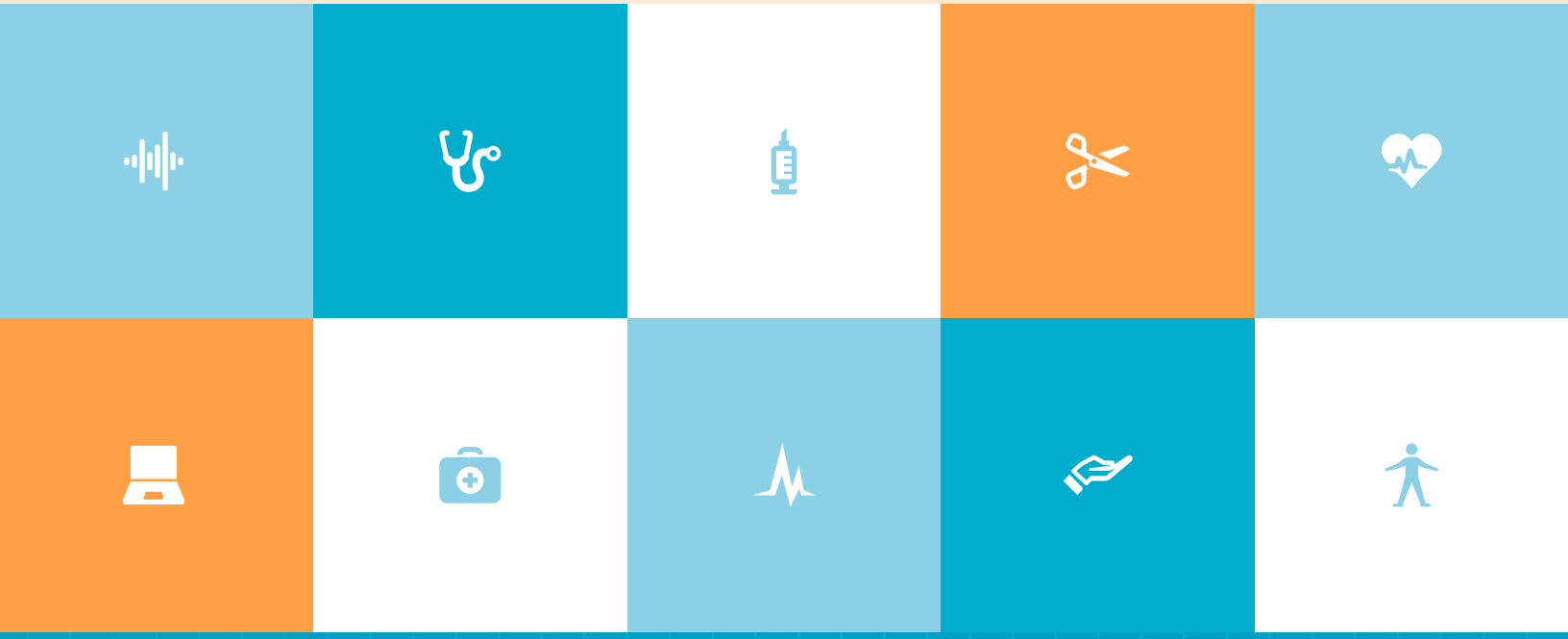
Healthcare Simulation Dictionary



Agency for Healthcare Research and Quality

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Preface

In January 2013, an international group of simulation experts gathered in Orlando, Florida, U.S.A. to form a working team whose mission was to create a dictionary of terms used in health care simulation. This group recognized a need to compile terms that had been completed by other groups in health care simulation and to add more terms. The document you see represents the work of many individuals and their societies to compile and refine the dictionary. The goal of this project is to enhance communication and clarity for health care simulationists in teaching, education, assessment, research, and systems integration activities. The Agency for Health care Research and Quality (AHRQ) has partnered with the Society for Simulation in Healthcare and its many affiliates to produce the first comprehensive Healthcare Simulation Dictionary and disseminate it widely as part of AHRQ's mission to improve patient safety, which includes simulation research.

There are some key points to keep in mind when looking at this document, because it is not perfect, nor complete.

- *This is a living document and represents the sum of the work at this moment. Terms and definitions will change and be edited, added, or deleted over time.*
- *The intent was to be inclusive of the various definitions in use, not to exclude any definitions or areas of health care simulation.*
- *This collection of definitions shows how the terms are being used in health care simulation. It is not intended to dictate one particular definition over another.*
- *This dictionary focuses on health-care-simulation-specific terms and meanings. Many terms that are generally used in education (e.g., educational design) and health care (e.g., ventricular fibrillation or anxiety) are not defined. The reader is referred to standard dictionaries and resources for these definitions.*
- *This list of terms is not a taxonomy, nor should it be used as such. It may inform taxonomical work.*
- *Terms that have been identified as potentially controversial have been noted with a * prior to the word.*
- *The terms and spellings are written in standard American English. This was at the recommendation of our consultant lexicographer to aid in reducing clutter and support translation to other languages.*
- *As a living document, all are encouraged to submit feedback using the form located at www.ssih.org/dictionary. We realize there may be better insights into other terms or definitions, additional references, etc.*
- *Citations have been included wherever possible. Should you know of additional and/or missing citations, please submit those as above. Original citations are preferred.*

The Society for Simulation in Healthcare (SSH) acknowledges the participation and input of many individuals and also the Societies they represent. Without you, this would not have been possible! Thank you for your time and efforts in the creation of this dictionary over the last 3 years.

Joseph O. Lopreiato M.D., M.P.H.
October 2016

SSH
Society for Simulation in Healthcare

A

*Actor \ˈak-tər \ *noun*

Etym. late 14c., "an overseer, guardian, steward," from Latin actor "an agent or doer," also "theatrical player," from past participle stem of agere. Sense of "one who performs in plays" is 1580s, originally applied to both men and women.

Definition

- In health care simulation, professional and/or amateur people trained to reproduce the components of real clinical experience, especially involving communication between health professionals and patients or colleagues (Australian Society for Simulation in Healthcare).

See also: CONFEDERATE, EMBEDDED PARTICIPANT, ROLE PLAYER, SIMULATED PATIENT, SIMULATED PERSON, STANDARDIZED PATIENT

Advocacy and Inquiry \ad-və-kə-sē \ in-ˈkwī(-ə)r-e\ *noun*

Etym. advocate (n.) mid-14c., "one whose profession is to plead cases in a court of justice," a technical term from Roman law. Also in Middle English as "one who intercedes for another," and "protector, champion, patron."

Etym. inquest (n.) mid-15c., enquery, from enquere (see 'inquire'). From Latin methodus "way of teaching or going," from Greek methodos "scientific inquiry," method of inquiry, investigation.

Definition

- A method of debriefing in which an observer states what was observed or performed in a simulation activity (advocacy) or shares critical or appreciative insights about it explicitly (advocacy) and then asks the learners for an explanation of their thoughts or actions (inquiry)(Rudolph et al, 2007).
- Inquiry seeks to learn what others think, know, want, or feel; whereas advocacy includes statements that communicate what an individual thinks, knows, wants or feels (Bolman & Deal, 2013).

Assessor \ ə-ˈse-sər \ *noun*

Etym. late 14c., from Old French assessor "assistant judge, assessor (in court)" (12c., Modern French assesseur) and directly from Latin assessor "an assistant, aid; an assistant judge."

Definition

- A person who performs assessment of individuals according to pre-established criteria.
- Assessors must have specific and substantial training, expertise, and competency in assessment (Dictionary.com).

Augmented Reality \òg-ˈmen-təd \ rē-ˈa-lə-tē \ *noun*

Etym. augment (v.) c. 1400, from Old French augmenter "increase, enhance" (14c.), from Late Latin augmentare "to increase," from Latin augmentum "an increase," from augere "to increase, make big, enlarge, enrich." ***Related:*** Augmented; augmenting.

Etym. reality (n.) 1540s, "quality of being real," from French réalité and directly Medieval Latin realitatem (nominative realitas); Meaning "real existence, all that is real."

Definition

- A type of virtual reality in which synthetic stimuli are superimposed on real-world objects, usually to make information that is otherwise imperceptible to human senses perceptible (M&S Glossary).
- A technology that overlays digital computer-generated information on objects or places in the real world for the purpose of enhancing the user experience.
- The combination of reality and overlay of digital information designed to enhance the learning process.
- A spectrum of mixed-reality simulation that is part way between the real world and the virtual world.
- A form of virtual reality that includes head-mounted displays, overlays of computer screens, wearable computers, or displays projected onto humans and manikins (D.R. Berryman et al; M. Bajura et al; H. Fuchs et al).

Avatar \ˈa-və-ˌtär\ *noun*

Etym. 1784, "descent of a Hindu deity," from Sanskrit. In computer use, it seems to trace to the novel "Snowcrash" (1992) by Neal Stephenson.

Definition

- A graphical representation, typically three-dimensional, of a person capable of relatively complex actions, including facial expression and physical responses, while participating in a virtual simulation-based experience. The user controls the avatar through the use of a mouse, keyboard, or a type of joystick to move through the virtual simulation-based experience. (Riley, 2015).

**Term that has been identified as potentially controversial.*

B

Brief (Briefing) \ brēf\ *noun* (\ˈbrē-fiŋ\ *verb*)

Note: this term is often not clearly distinguished from Orientation or Prebriefing

Etym. "fact or situation of giving preliminary instructions." 1910

Definition

- An activity immediately preceding the start of a simulation activity where the participants receive essential information about the simulation scenario, such as background information, vital signs, instructions, or guidelines. For example, before beginning a session, faculty conduct a briefing about the scenario to review the information being provided to the participants.
- The information and guidelines given to faculty or simulated patients participating in a scenario to allow them to fully prepare for interactions with the participants. Briefing materials could include a handover, physician referral letter, or an ambulance call transcript. For example, at the start of the simulation scenario, participants receive a notification from ambulance personnel regarding a patient being transported to their facility with a gunshot wound. (Alinier, 2011; Husebø et al., 2012).

See also: ORIENTATION, PREBRIEFING

C

Clinical Scenario \ kli-ni-kəl \ sə-ˈner-ē-ˌō \ *noun*

Etym. scenario (n.) 1868, "sketch of the plot of a play," from Italian scenario, from Late Latin scenarius "of stage scenes," from Latin scena "scene."

Etym. clinical (adj.) 1780, "pertaining to hospital patients or hospital care," from clinic + -al.

Definition

- The plan of an expected and potential course of events for a simulated clinical experience. A scenario usually includes the context for the simulation (hospital ward, emergency room, operating room, clinic, out of hospital, etc.). Scenarios can vary in length and complexity, depending on the learning objectives.
- A detailed outline of a clinical encounter that includes: the participants in the event, briefing notes, goals and learning objectives, participant instructions, patient information, environmental conditions, manikin or standardized patient preparation, related equipment, props, and tools or resources for assessing and managing the simulated experience.
- A progressive outline of a clinical encounter, including a beginning, an ending, a debriefing, and evaluation criteria (Meakim et al., 2013).

See also: SCENARIO, SCRIPT, SIMULATED-BASED LEARNING EXPERIENCE, SIMULATION ACTIVITY

Coaching \ kōch-iŋ \ *verb*

Etym. Meaning "to prepare (someone) for an exam."
Related: Coached; coaching.

Definition

- A method of directing or instructing a person or group of people in order to achieve a goal or goals, develop a specific skill or skills, or develop a competency or competencies. (International Nursing Association for Simulation and Clinical Learning, 2011)

Computer-Based Simulation \ kəm-ˈpyü-tər \ bāst \ sim-yuh-ley-shuh n \ *noun*

Etym. computer (n.) 1640s, "one who calculates," agent noun from compute (v.). Meaning "calculating machine" (of any type) is from 1897; in modern use, "programmable digital electronic computer" (1945 under this name; theoretical from 1937, as Turing machine). ENIAC (1946) usually is considered the first.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A simulation-based learning activity designed to provide an experience with inputs and outputs exclusively confined to a computer, usually associated with a monitor and a keyboard or other assistive device. (Textbook of Simulation, 2012). Learners can complete specific tasks in a variety of potential environments, use information to provide assessment and care, make clinical decisions, and observe the results in action. Feedback can be provided during and after the interaction (Durham & Alden, 2008).
- Facets of computer-based simulation include virtual patients, virtual reality task trainers, and immersive virtual reality simulation (Textbook of Simulation, 2012).

See also: SCREEN-BASED SIMULATION, SIMULATOR, VIRTUAL REALITY

Conceptual Fidelity \ kən-ˈsep-chə-wəl \ fə-ˈde-lə-tē, fī- \ *noun*

Etym. conceptual (adj.) 1820, "pertaining to mental conception" (there is an isolated use from 1662), from Medieval Latin conceptualis, from Latin conceptus" a collecting, gathering, conceiving," past participle of concipere. ***Related:*** Conceptualism; conceptualist.

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence."

Definition

- In health care simulation, ensures that all elements of the scenario relate to each other in a realistic way so that the case makes sense as a whole to the learner(s) (*For example: Vital signs are consistent with the diagnosis*). To maximize conceptual fidelity, cases or scenarios should be reviewed by subject matter expert(s) and pilot-tested prior to use with learners (Rudolph et al., 2007; Dieckmann et al., 2007).

*Confederate \ kən-ˈfe-d(ə-)rət \ *noun*

Etym. late 14c., from Late Latin confoederatus "leagued together," past participle of confoederare "to unite by a league," from com- "with, together."

Definition

- An individual(s) who, during the course of the clinical scenario, provides assistance locating and/or troubleshooting equipment. This individual(s) may provide support for participants in the form of 'help available', e.g. *'nurse in charge'*, and/or to provide information about the manikin that is not available in other ways, e.g., *temperature, color change*, and/or to provide additional realism by playing the role of a relative or a staff member (Australian Society for Simulation in Healthcare).
- An individual other than the patient, who is scripted in a simulation to provide realism, additional challenges, or additional information for the learner, e.g., *paramedic, receptionist, family member, laboratory technician* (Victorian Simulated Patient Network).

See also: ACTOR, EMBEDDED PARTICIPANT, SIMULATED PATIENT, SIMULATED PERSON, STANDARDIZED PATIENT

Cueing \ˈkyü – iŋ \ *verb*

Etym. cue (n.) "stage direction," 1550s, from Q, which was used 16c., 17c. in stage plays to indicate actors' entrances, probably as an abbreviation of Latin quando "when" or a similar Latin adverb.

Definition

- To provide information during the simulation that helps the participant progress through the activity to achieve stated objectives (modified from National League for Nursing - Simulation Innovation Resource Center, 2013).
- *noun* Information provided to help the learner reach the learning objectives (conceptual cues), or to help the learner interpret or clarify the simulated reality (reality cues). Conceptual cues help the learner reach instructional objectives through programmable equipment, the environment, or through responses from the simulated patient or role player, Reality cues to help the learner interpret or clarify simulated reality through information delivered during the simulation (modified from Paige & Morin, 2013).

**Term that has been identified as potentially controversial.*

D

Debrief (Debriefing) \ dēˈbrēf \ *noun* (\ dē ˈbrē-fiŋ\ *verb*)

Etym. debrief "obtain information (from someone) at the end of a mission," 1945, from de- + brief (v.). ***Related:*** Debriefed; debriefing.

Definition

- *(noun)* A formal, collaborative, reflective process within the simulation learning activity.
- An activity that follows a simulation experience and led by a facilitator.
- *(verb)* To conduct a session after a simulation event where educators/instructors/facilitators and learners re-examine the simulation experience for the purpose of moving toward assimilation and accommodation of learning to future situations (Johnson-Russell & Bailey, 2010; National League for Nursing - Simulation Innovation Resource Center, 2013); debriefing should foster the development of clinical judgment and critical thinking skills (Johnson-Russell & Bailey, 2010).
- To encourage participants' reflective thinking and provide feedback about their performance, while various aspects of the completed simulation are discussed.
- To explore with participants their emotions and to question, reflect, and provide feedback to one another (i.e., *guided reflection*).

Compare: ADVOCACY AND INQUIRY, FEEDBACK, GUIDED REFLECTION

Debriefer \ dē-ˈbrēf - ur\ *noun*

Etym. debrief "obtain information (from someone) at the end of a mission," 1945, from de- + brief (v.). ***Related:*** Debriefed; debriefing.

Definition

- The individual who facilitates a debriefing session and is knowledgeable and skilled in performing appropriate, structured, and psychologically safe debriefing sessions (Fanning & Gaba, 2007).
- The person who leads participants through the debriefing. Debriefing by competent instructors and subject matter experts is considered important to maximize the opportunities arising from simulation (Raemer et al, 2011).

Compare: FACILITATOR, SIMULATIONIST

Deliberate Practice \di-ˈli-bə-rāt\ˈprak-təs\ *noun*

Etym. deliberate (adj.) 15th century Middle English, from Latin *deliberatus,* past participle of *deliberare* to consider carefully, perhaps alteration of **delibrare,* from *de-* + *libra* scale, pound.

Etym. practice (n.) 14th century Middle English *practisen,* from Middle French *practiser,* from Medieval Latin *practizare,* alteration of *practicare,* from *practica* practice, noun, from Late Latin *practice,* from Greek *praktikē,* from feminine of *praktikos.*

Definition

- A theory of general psychology that states the differences between expert performers and normal adults reflect a life-long period of deliberate effort to improve performance in a specific domain. (Ericsson, K. A).
- A systematically designed activity that has been created specifically to improve an individual's performance in a given domain (Ericsson, Krampe, & Tesch-Römer, 1993).

Compare: MASTERY LEARNING

Deterministic \ di-ˈtər-mə-ˌni- stik \ *adj*

Etym. determinism (n.) 1876 in general sense of "doctrine that everything happens by a necessary causation," from French déterminisme; deterministic ***(adj.)*** 1874, from determinist (see determinism) + -ic.

Definition

- Pertaining to a process, model, or variable whose outcome, result, or value does not depend on chance (Department of Defense Modeling and Simulation Glossary).

Contrast with: STOCHASTIC

Discrete Simulation (Discrete-Event Simulation)

\ dis-ˈkrēt \ sim-yuh-ley-shuh n \ *noun*

Etym. discrete (adj.) mid-14c., "morally discerning, prudent, circumspect," from Old French discret "discreet, sensible, intelligent, wise," from Latin discretus "separated, distinct;" in Medieval Latin, "discerning, careful;" past participle of discernere "distinguish." Meaning "separate, distinct" in English is late 14c.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A simulation that relies on variables changed only at a countable number of points in time; discrete event simulation (DES) is the process of codifying the behavior of a complex system as an ordered sequence of well-defined events.
- The operation of a system as a discrete sequence of events in time. Each event occurs at a particular instant in time and marks a change of state in the system. Between consecutive events, no change in the system is assumed to occur; thus the simulation can directly jump in time from one event to the next (Robinson, 2004).
- One or more variables that completely describe a system at any given moment in time (Sokolowski & Banks, 2011).

Distributed Simulation

\ di-ˈstri-byüt \ sim-yuh-ley-shuh n \ *noun*

Etym. distribute (v.) early 15c., "to deal out or apportion," from Latin distributus, past participle of distribuere "to divide, distribute." ***Related:*** Distributable; distributed; distributing.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The concept of simulation on-demand, made widely available wherever and whenever it is required; DS provides an easily transportable, self-contained 'set' for creating simulated environments, at a fraction of the cost of dedicated, static simulation facilities (Kneebone et al, 2010).
- A set of simulations operating in a common environment and distributed to learners; a distributed simulation may be composed of any of the three modes of simulation: live, virtual, and constructive, and are seamlessly integrated within a single exercise (Department of Defense Modeling and Simulation Glossary).

Domains of Learning

"Three separate, yet interdependent components of learning outcomes achievable by human learners. These domains: cognitive, affective, and psychomotor, represent various categories and levels of learning complexity and are commonly referred to as educational taxonomies." (Bloom, 1956).

Table 1: Comparison of Bloom's original taxonomy (1956) and Bloom's revised taxonomies with Quality and Safety Education for Nurses (QSEN) competencies and knowledge, skills, and attitudes (From Longman et al, 2001; Menix, 1996; and Cronenwett et al, 2007).

Domains of Learning	Knowledge Dimension	QSEN Competencies
Original Bloom's Taxonomy	Revised Bloom's Taxonomy	QSEN Project
Cognitive	Factual knowledge Conceptual knowledge	Knowledge
Psychomotor	Procedural knowledge	Skills
Affective	Metacognitive knowledge	Attitudes

E

Embedded Participant \ im-ˈbed \ id \ pär-ˈti-sə-pənt \ *noun*

Etym. embed (v.) 1778, "to lay in a bed (of surrounding matter)," from em- (1) + bed (n.). Originally a geological term, in reference to fossils in rock; figurative sense is by 1835; meaning "place (a journalist) within a military unit at war" is from 2003 and the Iraq war. ***Related:*** Embedded; embedding.

Etym. participant (n.) 1560s, from Middle French participant, from Latin participantem, present participle of participare "to share in, partake of" from particeps "sharing, partaking."

Definition

- An individual who is trained or scripted to play a role in a simulation encounter in order to guide the scenario, and may be known or unknown to the participants; guidance may be positive or negative, or a distractor based on the objectives, level of the participants, and the needs of the scenario.
- A role assigned in a simulation encounter to help guide the scenario. The guidance may be positive, negative, or neutral or as a distracter, depending on the objective(s), the level of the participants, and the scenario. Although the embedded participant's role is part of the situation, the underlying purpose of the role may not be revealed to the participants in the scenario or simulation. (Meakim et al., 2013).

See also: ACTOR, CONFEDERATE, ROLE PLAYER, SIMULATED PATIENT, SIMULATED PERSON, STANDARDIZED PATIENT

Environmental Fidelity

\ en - vī-rə(n)-ˈmen-tə- l \ fə-ˈde-lə-tē \ *noun*

Etym. environmental (adj.) 1887, "environing, surrounding," from environment + -al (1). Ecological sense by 1967.
Related: Environmentally.

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith." From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Definition

- The degree to which the simulated environment (manikin, room, tools, equipment, moulage, and sensory props) replicates reality and appearance of the real environment.

See also: FIDELITY, HIGH FIDELITY SIMULATION, PHYSICAL FIDELITY, REALISM

Evaluation \ əˈvalyəˌwāt/shun \ *noun*

Etym. Evaluation (noun) mid 19th century: back-formation from evaluation, from French évaluer, from es- (from Latin ex-) 'out, from' + Old French value 'value.'

A broad term for appraising data or placing a value on data gathered through one or more measurements. It involves rendering a judgment, including strengths and weaknesses. Evaluation measures quality and productivity against a standard of performance. (Bourke & Ihrke, 2016). Introduction to the evaluation process.

Definition

Formative Evaluation

- Evaluation wherein the facilitator's focus is on the participant's progress toward goal attainment through preset criteria; a process for an individual or group engaged in a simulation activity for the purpose of providing constructive feedback for that individual or group to improve. (National League for Nursing Simulation Innovation Resource Center, 2013).

Summative Evaluation

- Evaluation at the end of a learning period or at a discrete point in time in which participants are provided with feedback about their achievement of outcome through preset criteria; a process for determining the competence of a participant engaged in health care activity. The assessment of achievement of outcome criteria may be associated with an assigned grade. (ibid)

Event \ i-ˈvent \ *noun*

Etym. 1570s, "the consequence of anything" (as in in the event that); 1580s, "that which happens;" from Middle French event, from Latin eventus "occurrence, accident, event, fortune, fate, lot, issue," from past participle stem of evenire "to come out, happen, result," from assimilated form of ex- "out" + venire "to come." Meaning "a contest or single proceeding in a public sport" is from 1865. Events as "the course of events" is attested from 1842.

Definition

- The occurrences that cause variation or changes in the state of a system (Sokolowski and Banks, 2009); in health care simulation, this term is common when programming manikins and often refers to learner actions.
- An event is described by the time it occurs and event lists can be created to drive changes in a simulation.

See also: STATE/STATES

F

Facilitator (Simulation Facilitator) \fə-ˈsi-lə-ˌtā-tər\ *noun*

Etym. 1806, agent noun in Latin form from facilitate.

Definition

- An individual who is involved in the implementation and/or delivery of simulation activities. *For example, faculty, educators, etc.*
- An individual that helps to bring about an outcome (such as learning, productivity, or communication) by providing indirect or unobtrusive assistance, guidance, or supervision. *For example: The debriefing facilitator kept the discussion flowing smoothly.*

Compare: DEBRIEFER, SIMULATIONIST

Feedback \ fēd-ˌbak \ *noun*

Etym. 1920, in the electronics sense, "the return of a fraction of an output signal to the input of an earlier stage," from verbal phrase, from feed (v.) + back (adv.). Transferred use, "information about the results of a process" is attested by 1955.

Definition

- An activity where information is relayed back to a learner; feedback should be constructive, address specific aspects of the learner's performance, and be focused on the learning objectives (Society for Simulation in Healthcare).
- Information transferred between participants, facilitator, simulator, or peer with the intention of improving the understanding of concepts or aspects of performance (Meakim et al., 2013). Feedback can be delivered by an instructor, a machine, a computer, a patient (or a simulated person), or by other learners as long as it is part of the learning process.

Compare: ADVOCACY AND INQUIRY, DEBRIEF/DEBRIEFING, GUIDED REFLECTION

Fiction Contract \ˈfik-shən\ ˈkän-ˌtrakt\ *noun*

Etym. fiction (n.) something that is not true; something invented by the imagination or feigned; an assumption of a possibility as a fact irrespective of the question of its truth; a useful illusion or pretense; the action of feigning or of creating with the imagination.

Etym. contract (n.) a binding agreement between two or more persons or parties.

Definition

- A concept that implies that an engagement in simulation is a contract between the instructor and the learner: each has to do his or her part to make the simulation worthwhile (Rudolph, Dieckmann, et al.).
- The degree of engagement that health care trainees are willing to give the simulated event. Also known as the "suspension of disbelief," it is a literary and theatrical concept that encourages participants to put aside their disbelief and accept the simulated exercise as being real for the duration of the scenario.
- The implicit or explicit agreement among participants and facilitator(s) about how the participant is expected to interact with the simulated situation and how the facilitators will treat that interaction. (International Nursing Association for Simulation and Clinical Learning, 2016).

*Fidelity \ fə-ˈde-lə-tē \ *adj*

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith." From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Definition

- The degree to which the simulation replicates the real event and/or workplace; this includes physical, psychological, and environmental elements.
- The ability of the simulation to reproduce the reactions, interactions, and responses of the real-world counterpart. It is not constrained to a certain type of simulation modality, and higher levels of fidelity are not required for a simulation to be successful.
- The level of realism associated with a particular simulation activity; fidelity can involve a variety of dimensions (Meakim et al., 2013):

**Term that has been identified as potentially controversial.*

Conceptual Fidelity

- Ensures all elements of the scenario or case relate to each other in a realistic way, so that the case makes sense to the learners (e.g., vital signs reflect the diagnosis).

Physical/ Environmental Fidelity

- Factors such as environment, manikins, room, moulage, equipment, noise, and/or props.

Psychological Fidelity

- Factors such as emotions, beliefs, and self-awareness of participants; the extent to which the simulated environment evokes the underlying psychological processes that are necessary in the real-world setting for the participant. The degree of perceived realism, including psychological factors such as emotions, beliefs, and self-awareness of participants in simulation scenarios. (Dieckmann, Gaba, & Rall, 2007; Kozlowski & DeShon, 2004).

See also: ENVIRONMENTAL FIDELITY, FUNCTIONAL FIDELITY, HIGH FIDELITY, HIGH FIDELITY SIMULATION, IMMERSIVE SIMULATION, LOW FIDELITY, PHYSICAL FIDELITY, PSYCHOLOGICAL FIDELITY, REALISM, SIMULATION FIDELITY

Fixation Error \ fik-ˈsā-shən \ er-ər \ *noun*

Etym. fixation (n.) late 14c., fixacion, an alchemical word, "action of reducing a volatile substance to a permanent bodily form," from Medieval Latin fixationem (nominative fixatio), noun of action from past participle stem of Latin fixare, frequentative of figere "to fix." Meaning "condition of being fixed" is from 1630s. Used in the Freudian sense since 1910.

Etym. error (n.) also, through 18c., errour; c. 1300, "a deviation from truth made through ignorance or inadvertence, a mistake." From late 14c. as "deviation from what is normal; abnormality, aberration." From 1726 as "difference between observed value and true value."

Definition

- A principle of crisis resource management wherein humans fail to revise a situation assessment in risky and dynamic systems or events (Decker, 2011).
- The persistent failure to revise a diagnosis or plan in the face of readily available evidence suggesting that a revision is necessary.

Compare: SITUATIONAL AWARENESS

Frame(s) \ frāmz \ *noun*

Etym. From 1660s in the meaning "particular state" (as in Frame of mind, 1711). Frame of reference is 1897.

Definition

- The perspectives through which individuals interpret new information and experiences for the purpose of decisionmaking; frames are formed through previous experiences and can be based on knowledge, attitudes, feelings, goals, rules, and/or perceptions.
- The mindset of the internal participant or facilitator; their knowledge, thoughts, feelings, actions (speech/body language), attitudes (verbal/non-verbal), and perceptions (adapted from Rudolph, et al., 2007, 2008).

Functional Fidelity \ˈfəŋ(k)-shnəl, -shə-nəl \fə-ˈde-lə-tē \ *noun*

Etym. functional (adj.) 1630s, "pertaining to function or office," from function (n.) + -al (1), or from Medieval Latin functionalis. Meaning "utilitarian" is by 1864. ***Related:*** Functionally; functionality.

Etym. fidelity (n) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith" (see faith). From 1530s as "faithful adherence to truth or reality."

Definition

- The degree in which the equipment used in the simulation responds to the participant's actions; e.g., a static ventilator would offer low functional fidelity compared to a working ventilator in a simulation requiring a ventilator alarm.

See also: FIDELITY, HIGHT FIDELITY SIMULATOR, REALISM

G

Guided Reflection \ gīd – id \ ri-ˈflek-shən\ *noun*

Etym. guide (v.) late 14c., "to lead, direct, conduct," from Old French guider "to guide, lead, conduct" (14c.), earlier guier, from Frankish *witan "show the way" or a similar Germanic source.

Etym. reflection (n.) Of the mind, from 1670s. Meaning "remark made after turning back one's thought on some subject" is from 1640s.

Definition

- The process encouraged by the instructor during debriefing that reinforces the critical aspects of the experience and encourages insightful learning, allowing the participant to link theory with practice and research (Meakim et al., 2013).
- The facilitated intellectual and affective activities that allow individuals to explore their experience in order to lead to new understanding and appreciations (adapted from Boud et al, 1985).
- A mentor-facilitated process that allows the learner to "integrate the understanding gained into one's experience in order to enable better choices or actions in the future, as well as enhance one's overall effectiveness" (Rogers, 2001).

Compare: ADVOCACY AND INQUIRY, DEBRIEF/DEBRIEFING, FEEDBACK
See also: REFLECTIVE THINKING

Gynecological / Genitourinary Teaching Associate (GTA, GUTA, MUTA) \ˌje-nə-tō-ˈyu̇r-ə-ˌner-ē \ˈtēch ng \ə-ˈsō-shē-ˌāt, -sē-\ *noun*

Etym. genitourinary (adj.) of or relating to the genital and urinary organs or functions. genitals (n.) "reproductive organs," especially the external sexual organs, late 14c. Compare Genitalia.

Definition

- A Genitourinary Teaching Associate (GUTA) is an individual trained to teach the techniques and protocol for performing the gender-specific physical examination to learners, using himself or herself as a demonstration and practice model.
- A Gynecological Teaching Associate (GTA) is a female specifically trained to teach, assess, and provide feedback to learners about accurate pelvic, rectal and/or breast examination techniques. They also address the communication skills needed to provide a comfortable exam in a standardized manner, while using their bodies as teaching tools in a supportive, non-threatening environment (Association of Standardized Patient Educators).
- A Male Urogenital Teaching Associates (MUTA) is a male specifically trained to teach, assess, and provide feedback to learners about accurate urogenital and rectal examination techniques. They also address the communication skills needed to provide a comfortable exam in a standardized manner, while using their bodies as teaching tools in a supportive, non-threatening environment (Association of Standardized Patient Educators).

H

Haptic (Haptics) \ˈhap-tik \ *adj*

Etym. (adj.) "pertaining to the sense of touch," 1890, from Greek haptikos "able to come into contact with," from haptein "to fasten."

Definition

- In health care simulation, refers to devices that providing tactile feedback to the user. Haptics can be used to simulate touching, palpating an organ, or body part, and the cutting, tearing, or traction on a tissue.
- Devices that capture and record a trainee's 'touch' in terms of location and depth of pressure at specific anatomical sites (McGaghie et al, 2010; Jackson et al).

Health Care Simulation

\ helth \ ker \ sim-yuh-ley-shuh n \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A technique that creates a situation or environment to allow persons to experience a representation of a real health care event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions (Society for Simulation in Healthcare).
- The application of a simulation activity to training, assessment, research, or systems integration toward patient safety (Society for Simulation in Healthcare).

See also: SIMULATION

High-Fidelity Simulator

\ hī \ fə-ˈde-lə-tē \ ˈsim-yə-ˌlā-tər \ *noun*

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith." From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Etym. simulator (n.) 1835, of persons, from Latin simulator "a copier, feigner," agent noun from simulare "imitate," from stem of similis "like." In reference to training devices for complex systems, from 1947 (flight simulator). simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966 (agent noun simulator in the related sense dates from 1947. In commercial jargon, "artificial, imitation" by 1942.

Definition

- A term often used to refer to the broad range of full-body manikins that have the ability to mimic, at a very high level, human body functions.
- Also known as a high-complexity simulator. Other types of simulators can also be considered high-fidelity, and that fidelity (realism) has other characteristics beyond a particular type of simulator.

See also: FIDELITY, FUNCTIONAL FIDELITY, REALISM

High-Fidelity Simulation

\ hī \ fə-ˈde-lə-tē \ sim-yuh-ley-shuh n \ *noun*

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith." From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- In health care simulation, high-fidelity refers to simulation experiences that are extremely realistic and provide a high level of interactivity and realism for the learner (International Nursing Association for Clinical Simulation and Learning, 2013). It can apply to any mode or method of simulation; *for example: human, manikin, task trainer, or virtual reality.*

See also: ENVIRONMENTAL FIDELITY, FIDELITY, REALISM

Human Factors \ hyü-mən \ fak-tərz \ *noun*

Etym. factor (n.) Sense of "circumstance producing a result" is attested by 1816, from the mathematical sense.

Definition

- The discipline or science of studying the interaction between humans and systems and technology; it includes, but is not limited to, principles and applications in the areas of human engineering, personnel selection, training, life support, job performance aids, and human performance evaluation (M&S Glossary).
- The psychological, cultural, behavioral, and other human attributes that influence decisionmaking, the flow of information, and the interpretation of information by individuals or groups (Department of Defense Modeling and Simulation Glossary).

Hybrid Simulation \ hī-brəd \ sim-yuh-ley-shuh n \ *noun*

Etym. hybrid (n.) "a product of two heterogeneous things" emerged c. 1850.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The union of two or more modalities of simulation with the aim of providing a more realistic experience.
- In health care simulation, hybrid simulation is most commonly applied to the situation where a part task trainer (e.g., a urinary catheter model) is realistically affixed to a standardized/simulated patient, allowing for the teaching and assessment of technical and communication skills in an integrated fashion (Kneebone, Kidd et al, 2002).
- The use of two or more simulation modalities in the same simulation activity (Zulkepli, et al., 2012).

Compare: MIXED SIMULATION/MIXED METHODS SIMULATION, MULTIPLE MODALITY SIMULATON

I

Immersion \i-ˈmər-zhən \ *noun*

Etym. (n.) c. 1500, from Late Latin immersionem (nominative immersio), noun of action from past participle stem of immergere "to plunge in, dip into, sink, submerge," from assimilated form of in- "into, in, on, upon" (see in- (2)) + Latin mergere "plunge, dip" (see merge). Meaning "absorption in some interest or situation" is from 1640s.

Definition

- Describes the level to which the learner becomes involved in the simulation; a high degree of immersion indicates that the learner is treating the simulation as if it was a real-life (or very close to real-life) event (Society for Simulation in Healthcare).
- A state (or situation) in which trainees dedicate most of their time doing something related to or thinking about a simulation, and becomes involved in it; the level of immersion might vary, where a high degree indicates that the trainee is fully involved; *for example: realistic environments facilitate a participant´s full immersion in the simulation.*

See also: IMMERSIVE SIMULATION

Immersive Simulation \ ɪˈmɜːsɪv\ sim-yuh-ley-shuh n \ *adj (immersive); n (simulation)*

Etym. immersion. (n.) c. 1500, from Late Latin immersionem, noun of action from past participle stem of immergere "to plunge in, dip into, sink, submerge," from assimilated form of in- "into, in, on, upon" (see in- (2)) + Latin mergere "plunge, dip" (see merge). Meaning "absorption in some interest or situation" is from 1640s.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- adj: A real-life situation that deeply involves the participants' senses, emotions, thinking, and behavior; creating an immersive simulation depends on the alignment with learning objectives, the fidelity of the simulation (physical, conceptual, and emotional), and participant´s perception of realism.
- noun: A simulation session influenced by participants' characteristics, experiences, level of training, and preparation for the case or task,. The perceived physical, conceptual and emotional fidelity, the appropriate level of challenge, and the simulators and actors can all affect the simulation experience (Hamstra et al, 2014; Rudolph et al, 2007).

See also: FIDELITY, IMMERSION, REALISM

Incognito Standardized Patient \ in-ˌkäg-ˈnē- \ stan-dər-ˌdīzd \ pā-shənt \ *noun*

Etym. incognito (adj./adv.) 1640s as both adjective ("disguised under an assumed name and character") and adverb ("unknown, with concealed identity"), from Italian incognito "unknown," especially in connection with traveling, from Latin incognitus "unknown, not investigated."

Etym. standard "authoritative or recognized exemplar of quality or correctness" (late 15c.). Meaning "rule, principal or means of judgment" is from 1560s. That of "definite level of attainment" is attested from 1711 (as in standard of living, 1903).

Etym. patient (n.) "suffering or sick person under medical treatment," late 14c.

Definition

- A person who plays a role as a patient in real health care situations, while the health care workers in those situations are unaware of the fact that the person is not a real patient (Rethans et al., 2007).

See also: UNANNOUNCED STANDARDIZED PATIENTS, STEALTH PATIENTS, SECRET SHOPPER

In Silico \ in-ˈsi-li-ˌkō \ *adj or adv.*

Etym. 1980s: Latin, literally 'in silicon' (with reference to the use of silicon chips in computer systems); on the pattern of in vitro and in vivo.

Definition

- Performed on computer or via computer simulation; the phrase was coined in 1989 as an analogy to the Latin phrases in vivo, in vitro, and in situ (Sieburg, 1990).

Compare: IN SITU

In Situ/In Situ Simulation

\ in ˈsɪtju \ sim-yuh-ley-shuh n \ *adj*

Etym. in situ 1740, Latin, literally "in its (original) place or position," from ablative of situs "site."

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- Taking place in the actual patient care setting/environment in an effort to achieve a high level of fidelity and realism; this training is particularly suitable for difficult work environments, due to space constraints or noise. *For example, an ambulance, a small aircraft, a dentist's chair, a catheterization lab* (Kyle & Murray, 2010). This training is valuable to assess, troubleshoot, or develop new system processes.

Compare: IN SILICO

Interactive Model or Simulation \ in-ter-ˈak-tiv \ mä-dəl \ or \ sim-yuh-ley-shuh n \ *adj*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- Simulating a situation in which the outcome varies depending on human participation (Thomas). This allows humans to practice different sets of actions in order to learn the correct response to an event.
- Modeling that requires human participation (Australian Department of Defense, 2011).

Interdisciplinary \ in-ter-**dis**-*uh*-pl*uh*-ner-ee \ *adj*

Etym. discipline (n.) directly from Latin disciplina "instruction given, teaching, learning, knowledge," also "object of instruction, knowledge, science, military discipline," from discipulus. Meaning "branch of instruction or education" is first recorded late 14c. Meaning "military training" is from late 15c.; that of "orderly conduct as a result of training" is from c. 1500.

Definition

- Involving two or more academic, scientific, or artistic disciplines (Merriam-Webster.com).
- The combining of two or more academic disciplines, fields of study, professions, technologies or departments (dictionary.reference.com).
- Of or relating to more than one branch of knowledge (oxforddictionaries.com).

See also: MULTIDISCIPLINARY

Interdisciplinary / Interdisciplinary Learning

\ in-ter -ˈdi-sə-plə-ˌner-ē \ lərn-ing \ *noun / adj*

Etym. discipline (n.) directly from Latin disciplina "instruction given, teaching, learning, knowledge," also "object of instruction, knowledge, science, military discipline," from discipulus. Meaning "branch of instruction or education" is first recorded late 14c. Meaning "military training" is from late 15c.; that of "orderly conduct as a result of training" is from c. 1500.

Etym. learning (n.) Old English leornung "learning, study," from leornian.

Definition

- *noun:* The academic disciplines, such as psychology, or subspecialties within professions. For example, within the profession of medicine, anesthesia or cardiology (Barr, Koppel, Reeves, et al., 2005).
- *adj:* Working jointly, but address issues from their individual discipline's perspective (Gray & Connolly, 2008).
- Integrating the perspective of professionals from two or more professions by organizing the education around a specific discipline, where each discipline examines the basis of their knowledge" (Bray & Howkins, 2008).

See also: INTERPROFESSIONAL EDUCATION/TRAINING/LEARNING

Interprofessional \ in-ter - \ prə-ˈfesh-nəl \ *adj*

Etym. professional (n.) "one who does it for a living," 1798, from professional (adj.).professional (adj.) 1747 of careers (especially of the skilled or learned trades from c. 1793). ***Related:*** profession.

Definition

- Collaborating as a team with a shared purpose, goal, and mutual respect to deliver safe, quality health care (Freeth, Hammick, Reeves, et al., 2008; World Health Organization, 2010).

Interprofessional Education /Training/Learning

\ in-ter - prə-ˈfesh-nəl \ e-jə-ˈkā-shən\ trā-niŋ \ lərn-ing\ *noun*

Etym. professional (n.) "one who does it for a living," 1798, from professional (adj.).professional (adj.) 1747 of careers (especially of the skilled or learned trades from c. 1793). ***Related:*** profession.

Etym. education (n.) 1530s, "childrearing," also "the training of animals," from Middle French education (14c.) and directly from Latin educationem (nominative educatio) "a rearing, training," noun of action from past participle stem of educare. Originally of instruction in social codes and manners; meaning "systematic schooling and training for work" is from 1610s.

Etym. training (n.) From 1540s as "discipline and instruction to develop powers or skills;" 1786 as "exercise to improve bodily vigor."

Definition

- An educational environment where students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes (World Health Organization Interprofessional Education and Collaborative Expert Panel, 2011).
- An initiative to secure learning, and promote gains through interprofessional collaboration in professional practice (Freeth, Hammick, Reeves, et al., 2008).

See also: INTERDISCPLINARY LEARNING

Interprofessionalism \ in-ter - \prə-ˈfesh-nəl \ ˈi-zəm\ *noun*

Etym. professional (n.) "one who does it for a living," 1798, from professional (adj.).professional (adj.) 1747 of careers (especially of the skilled or learned trades from c. 1793). ***Related:*** profession.

Definition

- The effective integration of professionals through mutual respect, trust, and support, from various professions, who share a common purpose to mold their separate skills and knowledge into collective responsibility and awareness that can be achieved through learned processes for communication, problem solving, conflict resolution, and conduct.

J

Just-in-Time Simulation

\ jəst \ ˈin \ tīm \ sim-yuh-ley-shuh n \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A method of training that is conducted directly prior to a potential intervention (Palaganas, Maxworthy, Epps, & Mancini, 2015). The training that is utilized is *"just in time"* at the *"place near the site of the potential intervention"* (Palaganas, Maxworthy, Epps, and Mancini, 2014).
- A learning approach that meets the learner's needs during or just before it is needed to maximize an educational outcome (Barnes, 1998).
- A cost-reduction method that is derived originally from the Japanese car manufacturing industry where it was a strategy that was utilized to reduce flow times in both production and response time costs (Ohno, 1978).

L

Live, virtual, and constructed (LVC) simulation

\ˈliv\ˈvər-chə-wəl, -chəl; ˈvərch-wəl\kən-ˈstrək-tiv\ *noun*

Etym. live 1540s, "having life," later (1610s) "burning, glowing," a shortening of alive. Meaning "in-person" (of performance) is first attested 1934.

Etym. virtual The meaning "being something in essence or effect, though not actually or in fact" is from mid-15c., probably via sense of "capable of producing a certain effect" (early 15c.). Computer sense of "not physically existing but made to appear by software" is attested from 1959.

Etym. constructed early 15c., "derived by interpretation," from Middle French constructif or from Medieval Latin *constructivus*, from Latin construct-, past participle stem of *construere* "to heap up."

Definition

- A broadly used taxonomy describing a mixture of simulation modalities; a live simulation involves real people operating real systems; a virtual simulation is where a real person operates simulated systems; and a constructed simulation does not involve real people or real systems, but instead consists of computer programs that create an environment. (Sokolowski & Banks, 2011).

Low-Fidelity \ ˈlō \ fə-ˈde-lə-tē \ *adj*

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith." From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Definition

- Not needing to be controlled or programmed externally for the learner to participate (Palaganas, Maxworthy, Epps, & Mancini, 2015); examples include case studies, role playing, or task trainers used to support students or professionals in learning a clinical situation or practice (Adapted from National League for Nursing - Simulation Innovation Resource Center, 2013).

See also: FIDELITY

M

*Manikin \ ma-ni-kən\ (also Mannequin) *noun*

Etym. 1560s, "jointed figure used by artists," from Dutch manneken, literally "little man," diminutive of Middle Dutch man.

Definition

- A life-sized human like simulator representing a patient for health care simulation and education (Palaganas, Maxworthy, Epps, & Mancini, 2015).
- Full or partial body representation of a patient for practice.
- Full or partial body simulators that can have varying levels of physiologic function and fidelity.

See also: SIMULATOR

Manikin-based Simulation \ ma-ni-kən \ bāst \ sim-yuh-ley-shuh n \ *noun*

Etym. manikin. 1560s, "jointed figure used by artists," from Dutch manneken, literally "little man," diminutive of Middle Dutch man.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The use of manikins to represent a patient using heart and lung sounds, palpable pulses, voice interaction, movement (e.g., seizures, eye blinking), bleeding, and other human capabilities that may be controlled by a simulationist using computers and software.
- The life-like aspects of people and situations generated by a manikin.

*Mannequin \ ma-ni-kən \ (also Manikin) *noun*

Etym. 1902, "model to display clothes," from French mannequin. A French form of the same word that yielded manikin, and sometimes mannequin was used in English in a sense "artificial man" (especially in translations of Hugo). Originally of persons, in a sense where we might use "model."

See: MANIKIN
See also: SIMULATOR

Manual Input \ˈman-yə-wəl \ ˈin-ˌpu̇t\ *noun*

Etym. manual (adj.) c. 1400, from Latin manualis "of or belonging to the hand; that can be thrown by hand," from manus "hand, strength, power over; armed force; handwriting."

Etym. input Middle English verb (late 14c.) meaning "to put in, place, set."

Definition

- The method of operation in which an operator inputs a value to a given parameter regardless of how it would affect any other parameter. The input of the parameter does not adjust the variables in any physiological manner (Palaganas, Maxworthy, Epps, & Mancini, 2015).

Compare: PHYSIOLOGIC MODELING, PREPACKAGE SCENARIO, "RUNNING ON THE FLY"

Mastery Learning \ˈmas-t(ə-)rē\ \ˈlərn- iŋ\ *noun*

Etym. mastery (adj.) early 13c., mesterie, "condition of being a master," also "superiority, victory;" from Old French maistrie, from maistre "master" (n.). Meaning "intellectual command" (of a topic, etc.) is from 1660s.

Etym. learning (n.) Old English leornung "learning, study," from leornian.

Definition

- An instructional philosophy originally proposed by Benjamin Bloom that stated a student must first practice and study to meet the predetermined level criteria (>90%) through the formative assessment of a prerequisite domain prior to advancing in subject matter. If the learner does not achieve the level of mastery, information from the test is used to diagnose areas of deficiency necessary for additional prescriptive support. The student is later tested again. This cycle of feedback and corrective procedures is repeated until mastery is achieved, at which point the student will move on to the next level (Guskey, 2010).
- An instructional philosophy that highlights individualized feedback and adequate time, allowing the learner to progress through the subject in a customized manner, generally in smaller units, to master the subject matter. This concept states that nearly all learners can achieve subject or skill mastery utilizing this method (Palaganas, Maxworthy, Epps, & Mancini, 2015).

Compare: DELIBERATE PRACTICE

**Term that has been identified as potentially controversial.*

Mixed Reality Human \ mikst \ rē-ˈa-lə-tē \ hyü-mən \ *noun*

Etym. reality (n.) 1540s, "quality of being real," from French réalité and directly Medieval Latin realitatem (nominative realitas), from Late Latin realis. Meaning "real existence, all that is real" is from 1640s; that of "the real state (of something)" is from 1680s.

Definition

- The use of a technology such as video, augmented reality, or virtual reality in conjunction with a physical manikin to simulate a human. (Costanza, E., Kunz, A., and Fjeld, M. 2009); for example, in team-based training, using TV monitors in portrait mode with interactive videos as a stand-in for a real team member (Palaganas, Maxworthy, Epps, & Mancini, 2015).

Mixed Simulation (Mixed Methods Simulation) \ mikst \ sim-yuh-ley-shuh n \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Etym. method (n.) early 15c., "regular, systematic treatment of disease," from Latin methodus "way of teaching or going," from Greek methodos "scientific inquiry, method of inquiry, investigation," originally "pursuit, a following after." Meaning "way of doing anything" is from 1580s; that of "orderliness, regularity" is from 1610s.

Definition

- The use of a variety of different simulation modalities; this is differentiated from hybrid simulation in that it is not characterized by the combining of one type of simulation to enhance another, but rather the use of multiple types of simulation in the same scenario or place. For example, a standardized patient (SP) and a mannequin are used in a scenario or a task trainer paired with an SP for venipuncture, etc. (Society for Simulation in Healthcare).

See also: MULTIPLE MODALITY SIMULATION
Compare: HYBRID SIMULATION

Mobile Simulation \ˈmō-bəl \ sim-yuh-ley-shuh n \ *noun*

Etym. mobile (adj.) late 15c., from Middle French mobile (14c.), from Latin mobilis "movable, easy to move; loose, not firm," "pliable, flexible. contraction of *movibilis, from movere "to move."

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The ability to move a simulator from one teaching location to another or to teach a scenario on the move (F.C. Forrest, Bristol Medical Simulation Center).

*Modality \ mō-ˈda-lə-tē\ *noun*

Etym. 1610s, from Old French modalité or directly from Medieval Latin modalitatem (nominative modalitas) "a being modal," from modalis. 1560s, term in logic, from Middle French modal and directly from Medieval Latin modalis "of or pertaining to a mode," from Latin modus "measure, manner, mode."

Definition

- A term used to refer to the type(s) of simulation being used as part of the simulation activity, for example, task trainers, manikin-based, standardized/simulated patients, computer-based, virtual reality, and hybrid (Society for Simulation in Healthcare).

See also: SIMULATED/SYNTHETIC LEARNING METHODS, TYPOLOGY

Model (as in Modeling and Simulation) \ mä-dəl \ *noun*

Etym. Sense of "thing or person to be imitated" is 1630s.

Definition

- A representation of an object, concept, event, or system; models can be physical models, computational models, or theories of function (Sokolowski, 2011).

Modeling and Simulation (M&S) (also Modeling and Simulation) \ˈmä-dəl – iŋ \ and \ sim-yuh-ley-shuh n \ *noun*

Etym model sense of "thing or person to be imitated" is 1630s.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The terms modeling and simulation are often used interchangeably.
- An academic discipline focused on the study, development, and use of live, virtual, and constructive models, including simulators, emulators, and prototypes to investigate, understand, or provide data.
- The use of models, including emulators, prototypes, simulators, and stimulators, to develop data as a basis for making managerial or technical decisions.

**Term that has been identified as potentially controversial.*

Monte Carlo Simulation

\ män-tē-ˈkär-(ˌ)lō \ sim-yuh-ley-shuh n \ *noun*

Etym. Monte Carlo fallacy 1957, named for resort in Monaco famous for its gambling casinos. The fallacy of thinking that the probability of a particular outcome rises with the successive number of opposite outcomes.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A simulation in which random statistical sampling techniques are employed such that the result determines estimates for unknown values (Department of Defense Modeling and Simulation Glossary).
- A mathematical model using probability distributions to calculate the possible outcomes for a given choice of action. Such a simulation involves many calculations and re-calculations to yield a range of possible outcomes.

Moulage \mü-ˈläzh\ *noun*

Etym. (n.) From the French: casting/moulding.

Definition

- The makeup and molds applied to humans or manikins used to portray lesions, skin findings, bleeding, and traumatized areas (Levine et al., 2013).
- The application of makeup and molds to a human or simulator's limbs, chest, head, etc. to provide elements of realism (such as blood, vomitus, open fractures, etc.) to the training simulation.
- Techniques used to simulate injury, disease, aging, and other physical characteristics specific to a scenario; moulage supports the sensory perceptions of participants and supports the fidelity of the simulation scenario through the use of makeup, attachable artifacts (e.g. penetrating objects), and smells (Meakim et al., 2013).

Multidisciplinary \ mʌltɪ \ di-sə-plə-ˌner-ē \ *noun*

Etym. discipline (n.) directly from Latin disciplina "instruction given, teaching, learning, knowledge," also "object of instruction, knowledge, science, military discipline," from discipulus. The Latin word is glossed in Old English by þeodscipe. Meaning "branch of instruction or education" is first recorded late 14c. Meaning "military training" is from late 15c.; that of "orderly conduct as a result of training" is from c. 1500.

Definition

- The combining of professionals with different perspectives to provide a wider understanding of a particular problem (Bray & Hawkins, 2008).

See also: INTERDISCIPLINARY

*Multiple modality (Multi-modal) simulation

\ˈmʌltɪpl \ moʊˈdæləti \ sim-yuh-ley-shuh n \ *noun*

Etym. modality. 1610s, from Old French modalité or directly from Medieval Latin modalitatem (nominative modalitas) "a being modal," from modalis. 1560s, term in logic, from Middle French modal and directly from Medieval Latin modalis "of or pertaining to a mode," from Latin modus "measure, manner, mode."

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The use of multiple modalities of simulation in the same simulation activity; differentiated from hybrid simulation in that it is not characterized by the combining of one type of simulation to enhance another, but rather the use of multiple types of simulation in the same scenario or place, e.g., SP and manikin used in a scenario or a task trainer paired with an SP for venipunture, etc. (Society for Simulation in Healthcare).
- A mixture of textual, audio, and visual modes in combination with media and materiality with the aim of enhancing the realism of the simulation encounter (Lutkewitte).

See also: MIXED SIMULATION/MIXED METHODS SIMULATION
Compare: HYBRID SIMULATION

**Term that has been identified as potentially controversial.*

N

Non-technical Skills \ non \ˈtek-ni-kəl \ skilz \ *noun*

Etym. techno word-forming element meaning “art, craft, skill,” later “technical, technology,” from Latinized form of Greek tekhno-, combining form of tekhne “art, skill, craft in work; method, system, an art, a system or method of making or doing.”

Etym. skill (n.) late 12c., “power of discernment,” from Old Norse skil “distinction, ability to make out, discernment, adjustment,” related to skilja (v.) “to separate; discern, understand,” from Proto-Germanic *skaljo. Sense of “ability, cleverness” first recorded early 13c.

Definition

- In the health care field, the skills of communication, (patient-provider, team) leadership, teamwork, situational awareness, decisionmaking, resource management, safe practice, adverse event minimization/mitigation, and professionalism; also known as behavioral skills or teamwork skills (Australian Society for Simulation in Healthcare).

O

Objective Structured Clinical Examination (OSCE)

\ əb-ˈjek-tiv \ strək-chərd \ kli-ni-kəl \ ig-ˌza-mə-ˈnā-shən \ *noun*

Definition

- An approach to the assessment of clinical or professional competence in which the components of competence are assessed in a planned or structured way with attention being paid to the objectivity of the examination (Harden, 1988).
- A station or series of stations designed to assess performance competency in individual clinical or other professional skills. Learners are evaluated via direct observation, checklists, learner presentation, or written follow-up exercises. The examinations may be formative and offer feedback or summative and be used for making high stakes educational decisions (Association of Standardized Patient Educators).
- A method of assessment where learners perform specific skills and behaviors in a simulated work environment.

Operations Specialist

\ op-uh-rey-shuh nz \ spesh-uh-list \ *noun*

Etym. operation (n.) late 14c., "action, performance, work," also "the performance of some science or art," from Old French operacion "operation, working, proceedings," from Latin operationem (nominative operatio) "a working, operation," from past participle stem of operari "to work, labor." Military sense of "series of movements and acts" is from 1749.

Etym. specialty (n.) From early 15c. as unusual, or extraordinary thing; specialized branch of learning; peculiar quality, distinctive characteristic.

Definition

- An individual whose primary role is the implementation and delivery of a simulation activity through the application of simulation technologies such as, computers, audio-visual (AV), or networking technologies.
- An inclusive "umbrella" term that embodies many different roles within health care simulation operations, including simulation technician, simulation technology specialist, simulation specialist, simulation coordinator, and simulation AV specialist. While many of these individuals also design simulation activities, this term refers to the functional role related to the implementation of the simulation activities (Society for Simulation in Healthcare).

Orientation \ȯr-ē-ən-ˈtā-shən,-ˌen- \ *noun*

Etym. (n.) 1839, originally "arrangement of a building, etc., to face east or any other specified direction," noun of action from orient (v.). Sense of "action of determining one's bearings" is from 1868. Meaning "introduction to a situation" is from 1942.

Definition

- The process of giving participants information prior to a simulation event to familiarize them with a simulation activity or environment, such as center rules, timing, and how the simulation modalities work, with the intent of preparing the participants.
- An activity that occurs prior to a simulation activity in order to prepare the faculty/instructors or learners; for example, a *PowerPoint presentation that all participants must review to understand how the center operates, or how the activity is being conducted*.

See also: BRIEF/BRIEFING, PREBRIEF/PREBRIEFING

P

Participant \ pahr-tis-uh-puh nt \ *noun*

Etym. 1560s, from Middle French participant, from Latin participantem (nominative participans), present participle of participare "to share in, partake of" from particeps "sharing, partaking."

Definition

- In health care simulation, a person who engages in a simulation activity for the purpose of gaining or demonstrating mastery of knowledge, skills, and/or attitudes of professional practice (Meakim et al., 2013).
- A person engaged in a simulation activity or event and for those involved in simulation research.

Physical Fidelity \ˈfi-zi-kəl\ fə-ˈde-lə-tē, fī-\ *noun*

Etym. physical early 15c., "of or pertaining to material nature" (in medicine, opposed to surgical), from Medieval Latin physicalis "of nature, natural," from Latin physica "study of nature" (see physic). Meaning "pertaining to matter" is from 1590s; meaning "having to do with the body, corporeal" is attested from 1780. Meaning "characterized by bodily attributes or activities" is attested from 1970. Physical education first recorded 1838; abbreviated form phys ed is from 1955. Physical therapy is from 1922. ***Related:*** Physically.

Etym. fidelity early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith" (see faith). From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Definition

- A level of realism associated with a particular simulation activity.
- The degree to which the simulation looks, sounds, and feels like the actual task (Alexander, Brunyé, Sidman, & Weil, 2005).

See also: ENVIRONMENTAL FIDELITY, FIDELITY, REALISM

Physiologic Modeling \ fiz-ee-uh-loj-i-k \ mod-l-ing \ *noun*

Etym. physiology (n.) 1560s, "study and description of natural objects," from Middle French physiologie or directly from Latin physiologia "natural science, study of nature," from Greek physiologia "natural science, inquiry into nature," from physio- "nature" + logia "study." Meaning "science of the normal function of living things" is attested from 1610s. ***Related:*** Physiologic; physiologist.

Etym model. Sense of "thing or person to be imitated" is 1630s.

Definition

- The mathematical computer models governing complex human physiology in a simulated patient case so that reasonable responses occur automatically to events inputted into the program. *For example: a pharmacodynamic model could predict effects of drugs on heart rate, cardiac output, or blood pressure and display them on a simulated clinical monitor.* (Howard Schwid, Rosen, 2013).
- A computer model that allows for a method of operation in which an operator inputs a value to a given parameter, and it automatically adjusts the other variables in a physiologically realistic manner (Palaganas, Maxworthy, Epps, and Mancini, 2015).

Compare: MANUAL INPUT, PREPACKAGED SCENARIO, "RUNNING ON THE FLY"

Portable Simulator \pawr-tuh-buh l \ sim-yuh-ley-ter \ *noun*

Etym. portable (adj.) Early 15c., from French portable "that can be carried," from Late Latin portabilis "that can be carried," from Latin portare "to carry." ***Related:*** Portability.

Etym. simulator (n.) 1835, of persons, from Latin simulator "a copier, feigner," agent noun from simulare "imitate," from stem of similis "like." In reference to training devices for complex systems, from 1947 (flight simulator); simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966 (agent noun simulator in the related sense dates from 1947). In commercial jargon, "artificial, imitation" by 1942.

Definition

- A simulator that has the capabilities of being moved, and may also be able to operate independently of tethers such as power cords or communication cables.

*Prebrief (Prebriefing) \ pri'brēf \ *noun* (\pri'brē-fiŋ\ *verb*)

Etym. brief "fact or situation of giving preliminary instructions," 1910 (but popularized by World War II pre-flight conferences).

Definition

- An information or orientation session held prior to the start of a simulation activity in which instructions or preparatory information is given to the participants. The purpose of the prebriefing is to set the stage for a scenario, and assist participants in achieving scenario objectives.
- An information or orientation session immediately prior to simulation-based experience(s) in which instructions or preparatory information is given to the participants. The purpose of the briefing is to establish a psychologically safe environment for participants. Suggested activities in a briefing include reviewing objectives, creating a 'fiction contract', and orienting participants to equipment, environment, manikin, roles, time allotment, and scenario. (Rudolph, Raemer & Simon, 2014; International Nursing Association for Clinical Simulation and Learning, 2016).
- The collaboration and planning of co-facilitators/co-debriefers prior to the simulation activity.

See also: BRIEF/BRIEFING, ORIENTATION

Prepackaged / Preprogrammed Scenario \ pree - pak-ijd \ si-nair-ee-oh \ *noun*

Etym. scenario (n.) 1868, "sketch of the plot of a play," from Italian scenario, from Late Latin scenarius "of stage scenes," from Latin scena "scene." Meaning "imagined situation" is first recorded 1960, in reference to hypothetical nuclear wars.

Definition

- A method of operation in which the simulator is programmed to be in one state and to respond to an input and transition to another state based on a script or algorithm.
- A scenario where a script will assign initial values (such as heart rate, blood pressure, emotional state, or concern) at the start of the scenario that will require specific actions by the participant or certain time frames, for the scenario to transition to the next state (Palaganas, Maxworthy, Epps, and Mancini, 2015).

Compare: PHYSIOLOGIC MODELING, "RUNNING ON THE FLY"

Procedural Simulation

\ pruh-see-jer-uh l \ sim-yuh-ley-shuh n \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The use of a simulation modality (for example, task trainer, manikin, computer) to assist in the process of learning to complete a technical skill(s), or a procedure, which is a series of steps taken to accomplish an end (International Nursing Association for Clinical Simulation and Learning, 2016).
- A simulation that incorporates cognitive knowledge and technical skill into a precise sequence of actions that are safe and efficient, targeting any level of learner (Palaganas, Maxworthy, Epps, & Mancini, 2015).

Compare: PROCESS-ORIENTED SIMULATION

Process-Oriented Simulation \ pros-es \ awr-ee-uh nt-id \ sim-yuh-ley-shuh n \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A simulation in which the process is considered more important than the outcome. *For example, a model of a radar system in which the objective is to replicate exactly the radar's operation, and duplication of its results is a lesser concern* (Department of Defense Modeling and Simulation Glossary).
- In health care, the use of simulation to examine the process of care rather than the outcome of care. *For example: using simulation to re-create an emergency in a patient area to see what latent safety threats exist, such as poor availability of patient equipment, inadequate emergency call buttons, or unsafe obstacles.*

Compare: PROCEDURAL SIMULATION

Prop \ prop \ *noun*

Etym. prop (n.) "object used in a play," 1898, from props (1841), shortened form of properties (which was in theatrical use from early 15c.).

Definition

- In simulation, an element or accessory used in a given scenario to enhance realism, or to provide a cue to learners.
- A physical object used as an interface to a virtual world; a prop may be embodied by a virtual object and might have physical controllers mounted on it (Australian Department of Defense).

**Term that has been identified as potentially controversial.*

Psychological Fidelity

\ sahy-kuh-loj-i-kuh l \ fə-ˈde-lə-tē \ *noun*

Etym. psychology (n.) 1650s, "study of the soul," from Modern Latin psychologia, probably coined mid-16c. in Germany by Melanchthon from Latinized form of Greek psykhe- "breath, spirit, soul" + logia "study of." Meaning "study of the mind" first recorded 1748, from Christian Wolff's "Psychologia empirica" (1732); main modern behavioral sense is from early 1890s.

Etym. fidelity (n.) early 15c., "faithfulness, devotion," from Middle French fidélité (15c.), from Latin fidelitatem (nominative fidelitas) "faithfulness, adherence, trustiness," from fidelis "faithful, true, trusty, sincere," from fides "faith." From 1530s as "faithful adherence to truth or reality;" specifically of sound reproduction from 1878.

Definition

- A level of realism associated with a particular simulation activity.
- The extent to which the simulated environment evokes the underlying psychological processes necessary in the real-world setting (Dieckmann et al., 2008).
- The degree of perceived realism, including psychological factors such as emotions, beliefs, and self-awareness of participants in simulation scenarios (Dieckmann et al., 2008).

See also: FIDELITY, REALISM

Psychological Safety \ sahy-kuh-loj-i-kuh l \ seyf-tee \ *noun*

Etym. psychology (n.) 1650s, "study of the soul," from Modern Latin psychologia, probably coined mid-16c. in Germany by Melanchthon from Latinized form of Greek psykhe- "breath, spirit, soul" + logia "study of." Meaning "study of the mind" first recorded 1748, from Christian Wolff's "Psychologia empirica" (1732); main modern behavioral sense is from early 1890s.

Etym. safety (n.) early 14c., from Old French sauvete "safety, safeguard; salvation; security, surety," earlier salvetet (11c., Modern French sauveté), from Medieval Latin salvitatem (nominative salvitas) "safety," from Latin salvus.

Definition

- A feeling (explicit or implicit) within a simulation-based activity that participants are comfortable participating, speaking up, sharing thoughts, and asking for help as needed without concern for retribution or embarrassment.
- The perception of members of the team that the team is safe for risk taking, and mistakes will be considered learning opportunities rather than there being embarrassment or punitive consequences (Edmondson, 1999; Higgins et al, 2012).

See also: SAFE LEARNING ENVIRONMENT, SIMULATION ENVIRONMENT

R

Realism \ rēə¸lizəm \ *noun*

Note: this term often used synonymously with fidelity but not all agree these are the same

Etym. realism (n.) 1794, from real (adj.) + -ism; after French réalisme or German Realismus; from Late Latin realis "real." Meaning "close resemblance to the scene" (in art, literature, etc., often with reference to unpleasant details) is attested from 1856.

Definition

- The ability to impart the suspension of disbelief to the learner by creating an environment that mimics that of the learner's work environment; realism includes the environment, simulated patient, and activities of the educators, assessors, and/or facilitators (SSH).
- A statement about the similarity of something (a 'copy') to something else (the 'original') (Dieckmann, Gaba, & Rall, 2007).
- The quality or fact of representing a person, thing, or situation accurately in a way true to life; this enables participants to act "as if" the situation or problem was real.
- Refers to the physical characteristics of the activity, semantical aspects of the activity (theories and conceptual relations – if A happens then B occurs), and/or the phenomenal aspects of the activity (emotions, beliefs, and thoughts experienced).

See also: FIDELITY, FUNCTIONAL FIDELITY, HIGH FIDELITY SIMULATION, HIGH FIDELITY SIMULATOR, IMMERSIVE SIMULATION, PHYSICAL FIDELITY, PSYCHOLOGICAL FIDELITY, SIMULATION FIDELITY

Reflective Thinking \ ri-flek-tiv \ thing-king \ *noun*

Etym. reflection (n.) Of the mind, from 1670s. Meaning "remark made after turning back one's thought on some subject" is from 1640s.

Definition

- The engagement of self-monitoring that occurs during or after a simulation experience; this self-monitoring is performed by participants during or after a simulation experience.
- A process to assist learners in identifying their knowledge gaps and demonstrating the areas in which they may need further improvement; it requires active involvement in the simulation and facilitator guidance to aid in this process (Rodgers, 2002; Decker et al., 2008; Kuiper & Pesut, 2004).
- The conscious consideration of the meanings and implications of the events of the simulation; this process allows participants to make meaning out of the experience, to identify questions generated by the experience, and ultimately, to assimilate the knowledge, skills, and attitudes uncovered through the experience with pre-existing knowledge.
- A process to assist learners in identifying their knowledge gaps and demonstrating the areas in which they may need further improvement; reflective thinking is necessary for metacognitive skill acquisition and clinical judgment and has the potential to decrease the gap between theory and practice. Reflection requires creativity and conscious self-evaluation to deal with unique patient situations. (International Nursing Association for Clinical Simulation and Learning, 2016).

See also: GUIDED REFLECTION

Role Player \ rohl-pley- r \ *noun*

Etym. role (n.) "part or character one takes," c. 1600, from French rôle "part played by a person in life," literally "roll (of paper) on which an actor's part is written," from Old French rolle.

Etym. player (n.) Old English plegere, agent noun from play (v.). Stage sense is from mid-15c.

Definition

- One who assumes the attitudes, actions, and discourse of (another), especially in a make-believe situation, in an effort to understand a differing point of view or social interaction. *For example: Nursing students were given a chance to role play a patient or a surgeon.* This term is sometimes used interchangeably with the terms 'simulated' and 'standardized patient' and may include medical, nursing, or other health professionals. (Victorian Simulated Patient Network).

See also: ACTOR, CONFEDERATE, EMBEDDED PARTICIPANT, SIMULATED PATIENT, SIMULATED PERSON, STANDARDIZED PATIENT.

"Running on the Fly" \ ruhn-ing \ on \ th uh \ flahy \ *noun*

Definition

- The method of operation for running a simulation whereby the operator changes the parameters of the scene, the standardized patient, or the simulator as the scenario unfolds; the changes are dependent on the observations and knowledge of the instructor or the operator, which is based on the actions of the participant.
- Running a simulation with minimal planning and preparation; a more impromptu type of simulation experience.

Compare to: MANUAL INPUT, PHYSIOLOGIC MODELING, PREPACKAGE SCENARIO

S

Safe Learning Environment

\ˈsāf\ \ˈlərn\ng\ en·vi·ron·ment \in-ˈvī-rə(n)-mənt \ *noun*

Etym. safe (adj.) not able or likely to be hurt or harmed in any way; not in danger.

Etym. environment (n.) the conditions that surround someone or something; the conditions and influences that affect the growth, health, progress, etc., of someone or something.

Definition

- A learning environment where it is clarified that learners feel physically and psychologically safe to make decisions, take actions, and interact in the simulation.
- A learning environment of mutual respect, support, and respectful communication among leaders and learners; open communication and mutual respect for thought and action encouraged and practiced.

See also: PSYCHOLOGICAL SAFETY

Scenario \si-nair-ee-oh \ *noun*

Etym. (n.) 1868, "sketch of the plot of a play," from Italian scenario, from Late Latin scenarius "of stage scenes," from Latin scena "scene." Meaning "imagined situation" is first recorded 1960, in reference to hypothetical nuclear wars.

Definition

- In health care simulation, a description of a simulation that includes the goals, objectives, debriefing points, narrative description of the clinical simulation, staff requirements, simulation room set up, simulators, props, simulator operation, and instructions for standardized patients (Alinier, 2011).
- A deliberately designed simulation experience (also known as a case) that provides participants with an opportunity to meet identified objectives. (International Nursing Association for Clinical Simulation and Learning, 2016).
- The scripts, stories, or algorithms created for instructing the participants, including the simulators (human or robotic), on how to interact with the students.
- An initial set of conditions and timeline of significant events imposed on trainees or systems to achieve exercise objectives (Department of Defense Modeling and Simulation Glossary, 2014).

See also: CLINICAL SCENARIO, SCRIPT

Screen - based Simulation / Screen - based Simulator

\ skreen \ bāst \ sim-yuh-ley-shuh n \ *noun*

Etym. screen (n.) Meaning "flat vertical surface for reception of projected images" is from 1810, originally in reference to magic lantern shows; later of movies. Related ***screenshot*** (n.) by 1991, from (computer) screen (n.) + shot (n.) in the photograph sense.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Etym. simulator (n.) 1835, of persons, from Latin simulator "a copier, feigner," agent noun from simulare "imitate," from stem of similis "like." In reference to training devices for complex systems, from 1947 (flight simulator); simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966 (agent noun simulator in the related sense dates from 1947). In commercial jargon, "artificial, imitation" by 1942.

Definition

- A simulation presented on a computer screen using graphical images and text, similar to popular gaming format, where the operator interacts with the interface using keyboard, mouse, joystick, or other input device. The programs can provide feedback to, and track actions of learners for assessment, eliminating the need for an instructor (Ventre & Schwid, in Levine, Chapter 14).
- A computer-generated video game simulator that can create scenarios that require real-time decisionmaking (Bonnetain, Biese, et al., 2009).

See also: COMPUTER-BASED SIMULATION, SIMULATOR

Scribe / Scribing \ˈskrīb\ *noun / verb* \ˈskribiNG\

Etym. special use of Latin scriba "keeper of accounts, secretary, writer," from past participle stem of scribere "to write." Sense "one who writes, official or public writer" in English is from late 14c.

Definition

- The act of making notes about a scenario and documenting the actions taken or not taken.

Script \ skript \ *noun*

Etym. (n.) late 14c., "something written." Meaning "handwriting" is recorded from 1860. Theatrical use, short for manuscript, is attested from 1884.

Definition

- The written plan for a simulation event that includes various sets of topics, subtopics, skills, and triggers that will create the situation to induce the desired observable behaviors by the participant(s).
- A preordained series of actions based on the time and sequence of specific events.
- A written set of instructions providing a detailed plan of action for a simulation case; similar to a theatrical play.
- The lines to be spoken by operators, embedded actors, or simulated patients during a simulation event.

See also: CLINICAL SCENARIO, SCENARIO

Serious Games \ seer-ee-uh s \ geymz \ *noun*

Etym. serious (adj.) mid-15c., "expressing earnest purpose or thought" (of persons), from Middle French sérieux "grave, earnest" (14c.), from Late Latin seriosus, from Latin serius "weighty, important, grave." Gothic….."honored, esteemed," literally "weighty." Meaning "attended with danger" is from 1800.

Etym. games (n.) 1200, from Old English gamen "joy, fun; game, amusement," "participation, communion." "contest for success or superiority played according to rules" is first attested c. 1200 (of athletic contests, chess, backgammon).

Definition

- A mental contest played with a computer in accordance with specific rules, which uses entertainment to further training, education, health, public policy, and strategic communication objectives (Zyda, 2005).
- A game designed for a primary purpose other than pure entertainment. Serious games have an explicit and carefully thought out educational purpose, and are not intended to be played primarily for amusement (Michael and Chen, 2006). Serious games are simulations of real-world events, or processes designed for the purpose of solving a problem.
- In the defense context, serious games are used to rehearse, train, or explore military options in a simulation of real-world events or processes (Australian Dept. of Defense); The "serious" adjective is generally appended to refer to products used by industries like defense, education, scientific exploration, health care, emergency management, city planning, engineering, religion, and politics.

See also: SIMULATOR

Shared Mental Model \ shaird \ men-tl] \ mod-l] \ *noun*

Etym. share (n.) (v.) 1580s, "to apportion to someone as his share; to apportion out to others; to enjoy or suffer (something) with others," from share. Meaning "to divide one's own and give part to others" is recorded from 1590s. ***Related:*** Shared, sharer, sharing

Etym. mental (adj.) early 15c., "pertaining to the mind," from Middle French mental, from Late Latin mentalis "of the mind," from Latin mens (genitive mentis) "mind;" cognates: Sanskrit matih "thought, mind;" Old English gemynd "memory, remembrance."

Etym. model. Sense of "thing or person to be imitated" is 1630s.

Definition

- A means of describing that each participant in a simulation has a shared understanding of the purpose and process of the simulation activity and participants' roles.
- The knowledge framework of the relationships between the task the team is engaged in and how the team members will interact. *For example: this framework facilitates a team's ability to predict what team members will do when faced with a task, and what they will need to do it.*
- A framework whereby an individual team member develops a perception of the situation, it is shared, allowing the team to reflect on the information and revise their situational awareness and their own mental model based on new information. *For example: Sharing can be done by vocalizing observations, calling out information, using a structured time-out to communicate new information, and thinking out loud to allow others to relate and appreciate the associations, assessments, and plans.* Shared mental models facilitate collaboration, and are crucial when team communication in a situation is difficult (due to time pressure, etc.).

Compare: SITUATIONAL AWARENESS

Simulated-Based Learning Experience

\ sim-yuh-leyt –id \ bāst \ lur-ning \ ik-speer-ee-uh ns \ *noun*

Etym. simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966; commercial jargon, "artificial, imitation" by 1942.

Etym. learning (n.) Old English leornung "learning, study," from leornian. Learning curve attested by 1907.

Etym. experience (v.) 1530s, "to test, try, learn by practical trial or proof;" (n.). Sense of "feel, undergo" first recorded 1580s. ***Related:*** Experienced; experiences; experiencing.

Etym. experience (n.) late 14c., "observation as the source of knowledge; actual observation; an event which has affected one," from Old French esperience "experiment, proof, experience" (13c.), from Latin experientia "a trial, proof, experiment; knowledge gained by repeated trials;" Meaning "state of having done something and gotten handy at it" is from late 15c.

Definition

- An array of structured activities that represent actual or potential situations in education and practice. These activities allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment. (Pilcher, Goodall, Jensen, et al., 2012).

See also: CLINICAL SCENARIO, SIMULATION ACTIVITY

Simulated Patient (SP) \ sim-yuh-leyt -id \ pey-shuh nt \ *noun*

Note: this term is often synonymous with Standardized Patient

Etym. simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966; commercial jargon, "artificial, imitation" by 1942.

Etym. patient (n.) "suffering or sick person under medical treatment," late 14c., from Old French pacient (n.), from the adjective, from Latin patientem.

Definition

- A person who has been carefully coached to simulate an actual patient so accurately that the simulation cannot be detected by a skilled clinician. In performing the simulation, the SP presents the gestalt of the patient being simulated; not just the history, but the body language, the physical findings, and the emotional and personality characteristics as well (Barrows, 1987). Often used interchangeably with standardized patients in the USA and Canada, but in other countries simulated patient is considered a broader term than standardized patient, because the simulated patient scenario can be designed to vary the SP role in order to meet the needs of the learner.
- An individual who is trained to portray a real patient in order to simulate a set of symptoms or problems used for health care education, evaluation, and research (Society for Simulaton in Healthcare).
- SPs can be used for teaching and assessment of learners including but not limited to history/consultation, physical examination, and other clinical skills in simulated clinical environments Association of Standardized Patient Education (ASPE). SPs can also be used to give feedback and evaluate learner performance (Association of Standardized Patient Education).

See also: ACTOR, CONFEDERATE, EMBEDDED PARTICIPANT, ROLE PLAYER, SIMULATED PERSON, STANDARDIZED PATIENT.

Simulated Person \ sim-yuh-leyt -id \ pur-suh n \ *noun*

Etym. simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966; commercial jargon, "artificial, imitation" by 1942.

Definition

- A person who portrays a patient (simulated patient), family member, or health care provider in order to meet the objectives of the simulation; a simulated person may also be referred to as a standardized patient/family/health care provider if they have been formally trained to act as real patients in order to simulate a set of symptoms or problems used for health care education, evaluation, and research. Simulated persons often engage in assessment by providing feedback to the learner (Palaganas, et al., 2012).

See also: CONFEDERATE, EMBEDDED PARTICIPANT, ROLE PLAYER, SIMULATED PATIENT, STANDARDIZED PATIENT, STANDARDIZED/ SIMULATED PARTICIPANT

Simulated/Synthetic Learning Methods

\ sim-yuh-leyt –id \ sin-thet-ik \lur-ning \ meth-uh dz *noun*

Etym. simulated (adj.) 1620s, "feigned," past participle adjective from simulate (v.). Meaning "imitative for purposes of experiment or training" is from 1966; commercial jargon, "artificial, imitation" by 1942.

Etym. synthetic (adj.) 1690s, as a term in logic, "deductive," from French synthétique (17c.) and directly from Modern Latin syntheticus, from Greek synthetikos "skilled in putting together, constructive," from synthetos "put together, constructed, compounded," past participle of syntithenai "to put together" (see synthesis). ***Related:*** Synthetical (1620s in logic).

Etym. learning (n.) Old English leornung "learning, study," from leornian.

Etym. method (n.) from Latin methodus "way of teaching or going," from Greek methodos "scientific inquiry, method of inquiry, investigation," originally "pursuit, a following after," from meta- "after" + hodos "a traveling, way." Meaning "way of doing anything" is from 1580s; that of "orderliness, regularity" is from 1610s.

Definition

The principles, pedagogies, and educational strategies used in health care simulation. They include:

- ***Case-based learning*** - written and oral presentations used to present and review clinical scenarios but do not involve hands-on learning, e.g., table-top simulation.
- ***Computer simulation*** – see Computer Simulation.
- ***Procedural or Partial Task Training*** - see Part-task Trainer or Task Trainer.
- ***Hybrid Simulation***- see Hybrid Simulation.
- ***Integrated procedural training (psychomotor focus)*** - Combines a series of discrete tasks that are conducted simultaneously or in sequence to form a complex clinical task (e.g., endotracheal intubation and cervical spine immobilization in a trauma patient).
- ***Integrated procedural training (whole procedure)*** - Integrates task training with role play (actors) to enable procedural and communication tasks to be practiced simultaneously.
- ***Mixed simulation***- see Mixed Simulation.
- ***Simulation / Scenario-based learning*** - Learners interact with people, simulators, computers, or task trainers to accomplish learning goals that are representative of the learner's real-world responsibilities. The environment may resemble the workplace. Depending on the learning objectives, realism can be built into the equipment or the environment.
- ***Standardized/Simulated Patient*** - see Standardized/Simulated Patient. ***Role play*** - see Role Play.
- **Debriefing** – see Debriefing.
- ***Multimodal formats*** – see Multiple Modality.

See also: MODALITY, TYPOLOGY

Simulation \ sim-yuh-ley-shuh n \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions.
- A strategy in which a particular set of conditions are created or replicated to resemble authentic situations that are possible in real life. Simulation can incorporate one or more modalities to promote, improve, or validate a participant's performance. (Gaba,2004).
- An educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner (Gaba, 2004).
- A pedagogy using one or more typologies to promote, improve, or validate a participant's progression from novice to expert. (Meakim et al., 2013).
- The application of a simulator to training and/or assessment. (Society for Simulation in Healthcare).
- A method for implementing a model over time.

Simulation Activity \ sim-yuh-ley-shuh n \ ak-tiv-i-tee \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The entire set of actions and events from initiation to termination of an individual simulation event; in the learning setting, this is often considered to begin with the briefing (prebriefing) and end with the debriefing.
- All the elements in a simulation session, including the design and setup required.

See also: SIMULATED-BASED LEARNING EXPERIENCE

Simulation-Enhanced Interprofessional Education / (Sim-IPE)

\ sim-yuh-ley-shuh n \ in-ˈhan(t)st \ in-ˈtər\ prə-ˈfesh-nəl \ e-jə-ˈkā-shən\ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Etym. education (n.) the action or process of teaching someone especially in a school, college, or university; the knowledge, skill, and understanding that you get from attending a school, college, or university; a field of study that deals with the methods and problems of teaching.

Definition

- The education of health care professionals with different but complementary knowledge and skills in a simulation environment that promotes a collaborative team approach. Simulation-enhanced interprofessional education (Sim-IPE)occurs when participants and facilitators from two or more professions are engaged in a simulated health care experience to achieve shared or linked objectives and outcomes (Decker, et al., 2015). It is designed for the individuals involved to…."*learn about, from and with each other to enable effective collaboration and improve health outcomes"* (World Health Organization, 2012).
- A collaborative educational approach that brings together health care professionals of varying specialties in a simulation environment engaging learners in an interprofessional teamwork model (Decker et. al., 2008).
- A simulation environment of equal and mutual respect and recognition of each team member's knowledge and skills.

Simulation Environment / Simulation Learning Environment / Synthetic Learning Environment (SLE)

\ sim-yuh-ley-shuh n \ lur-ning \ en-vahy-ruh n-muh nt \ sin-ˈthe-tik\ ˈlərn-ing \ in-ˈvī-rə(n)-mənt \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Etym. synthetic (adj.) 1690s, as a term in logic, "deductive," from French synthétique (17c.) and directly from Modern Latin syntheticus, from Greek synthetikos "skilled in putting together, constructive," from synthetos "put together, constructed, compounded," past participle of syntithenai "to put together" (see synthesis). ***Related:*** Synthetical (1620s in logic).

Etym. learning (n.) Old English leornung "learning, study," from leornian.

Etym. environment (n.) 1887, "environing, surrounding," Ecological sense by 1967.

Definition

- The physical setting where simulation activities may take place, inclusive of the people and equipment that form part of the simulation experience.
- A location where a simulation-based learning experience takes place, and where a safe atmosphere is created by the facilitator to foster sharing and discussion of participant experiences without negative consequences.
- A context for learning that consists of a controlled and shielded representation of real-world situations, and a set of educational methods and procedures in which trainees feel simultaneously challenged and psychologically safe to practice and reflect on their performance (Rudolph et al., 2007).
- An atmosphere that is created by the facilitator to allow for sharing and discussion of participant experiences without fear of humiliation or punitive action.
- A setting, surrounding, or conditions that reproduce components or aspects of the real-world environment, for the purpose of learning and related activities, and/or research (Australian Society for Simulation in Healthcare).

See also: PSYCHOLOGICAL SAFETY

Simulation Fidelity \ sim-yuh-ley-shuh n \ fə-ˈde-lə-tē \ *noun*

Note: the term fidelity is often used synonymously with realism but not all agree these are the same

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The level of realism associated with a particular simulation activity.
- The physical, semantic, emotional, and experiential accuracy that allows persons to experience a simulation as if they were operating in an actual activity (Society for Simulation in Healthcare).
- The believability, or the degree to which a simulated experience approaches reality. Fidelity can involve a variety of dimensions, including (a) physical factors such as environment, equipment, and related tools; (b) psychological factors such as emotions, beliefs, and self-awareness of participants; (c) social factors such as participant and instructor motivation and goals; (d) culture of the group; and (e) degree of openness and trust, as well as participants' modes of thinking (Rudolph et al., 2007).

See also: FIDELITY

Simulation Guideline
\ sim-yuh-ley-shuh n \ gahyd-lahyn \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A recommendation of the qualities for simulation fidelity, simulation validity, simulation program, or for formative or summative evaluation (Society for Simulation in Healthcare).
- A set of procedures or principles that are recommended to assist in meeting standards. Guidelines are not necessarily comprehensive. They provide a framework for developing policies and procedures based on best practice.
- A set of recommendations, incorporating currently known best practice, based on research and/or expert opinion.

Compare: SIMULATION STANDARD

Simulationist \ sim-yuh-ley-shuh n - ist \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- An individual who is involved in the design, implementation, and/or delivery of simulation activities; for example, educators, technologists, operations specialists, technicians (Society for Simulation in Healthcare].
- A modeling and simulation professional (Tucker, 2010).
- A person "who is involved, full-time or part-time, in modeling or simulation activities" for example, develops models to be used for simulation purposes; performs simulation studies; develops simulation software; manages simulation projects; advertises and/or markets simulation products and/or services; maintains simulation products and/or services; promotes simulation-based solutions to important problems; advances simulation technology; and advances simulation methodology and/or theory) (Ören, 2000).

Compare: DEBRIEFER, FACILITATOR

Simulation Reliability
\ sim-yuh-ley-shuh n \ ri-lahy-uh-bil-i-tee \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Etym. reliable (adj.) 1560s, raliabill, Scottish; see rely + -able.

Definition

- The consistency of a simulation activity, or the degree to which a simulation activity measures in the same way each time it is used under the same conditions with the same participants.

Compare: SIMULATION VALIDITY

Simulation Standard \ sim-yuh-ley-shuh n \ stan-derd \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A statement of the minimum requirements for simulation fidelity, validity, formative or summative evaluation, or any other element related to a simulation activity or program (Society for Simulation in Healthcare).

Compare: SIMULATION GUIDELINE

Simulation Testing Environment \sim-yuh-ley-shuh n \ tee-ching \ en-vahy-ruh n-muh nt \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A context for formative or summative evaluation of an individual´s or team´s performance. The goals of the simulation testing environment are to create an equivalent activity for all participants in order to test their knowledge, skills, and abilities in a simulated setting (Meakim et al., 2013).

Simulation Time \ sim-yuh-ley-shuh n \ tahym \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A simulation's internal representation of time; simulation time may accumulate faster, slower, or at the same pace as real time.
- A time established by the simulation educator before the start of the simulation exercise, irrespective of the actual real time (Hancock et al, 2008).

Simulation Validity \sim-yuh-ley-shuh n \ vuh-lid-i-tee\ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The degree to which a model or simulation accurately represents or measures what it intends to measure.
- In health care simulation, the quality of a simulation or simulation program that demonstrates that the relationship between the process and its intended purpose is specific, sensitive, reliable, and reproducible (Dieckmann, 2009; Society for Simulation in Healthcare).

Compare: SIMULATION RELIABILITY

Simulator \ sim-yuh-ley-ter \ *noun*

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A setting, device, computer program or system that performs simulation (Hancock et al, 2008).
- Any object or representation used during training or assessment that behaves or operates like a given system and responds to the user's actions (Society for Simulation in Healthcare).
- A device that duplicates the essential features of a task situation. A simulator generally has three elements – a modelled process which represents, emulates, or otherwise simulates a real-world system; a control system; and a human-machine interface which is representative of the inputs found in the real-world system (Australian Department of Defense). Examples include manikins and part-task trainers.

See also: COMPUTER-BASED SIMULATION, MANIKIN, SERIOUS GAMES, SCREEN-BASED SIMULATION, SIMULATED PATIENT, STANDARDIZED PATIENT, TASK TRAINER, VIRTUAL REALITY

Situated Learning \sich-oo-ey-tid \ lur-ning \ *noun*

Etym. situate (v.) early 15c., "to place in a particular state or condition," from Medieval Latin situatus, past participle of situare "to place, locate," from Latin situs "a place, position" (see site). ***Related:*** Situated; situating, situation (n.).

Etym. learning (n.) Old English leornung "learning, study," from leornian (see learn). Learning curve attested by 1907.

Definition

- A theory that posits that learning occurs within authentic activity, context, and culture. Social interaction and collaboration are considered essential components (Lave and Wenger, 2008). This is opposed to a classroom learning activity that is abstract and out of context.

Situational Awareness
\sich-oo-ey-shuh n-ul \ ə-ˈwer-nis\ *noun*

Etym. situate (v.) early 15c., "to place in a particular state or condition," from Medieval Latin situatus, past participle of situare "to place, locate," from Latin situs "a place, position" (see site). ***Related:*** Situated; situating, situation (n.).

Etym. awareness (n.) 1828, from aware + -ness. Late Old English gewær, "wary, cautious."

Definition

- Situation awareness (SA) is the perception of environmental elements within time and space, and a perception of their meaning; it involves being aware of what is happening around you to understand how information, events, and your own actions impact the outcomes and objectives.
- A field of study concerned with understanding of the environment critical to decisionmakers in complex, dynamic areas; situational awareness refers to the degree to which one's perception of a situation matches reality.
- The awareness of fatigue and stress among team members (including oneself), environmental threats to safety, immediate goals, information sharing, and the deteriorating status of the crisis or patient. Most commonly used in the context of crisis resource management training (Hancock et al, 2008).

Compare: SHARED MENTAL MODEL
Contrast with: FIXATION ERROR

Standardized Patient (SP) \ stan-dər-ˌdīz-d \ pā-shənt \ *noun*

[Note: this term is often synonymous with Simulated Patient]

Etym. standard - "authoritative or recognized exemplar of quality or correctness" (late 15c.). Meaning "rule, principal or means of judgment" is from 1560s. That of "definite level of attainment" is attested from 1711 (as in standard of living, 1903).

Etym. patient – (n.) "suffering or sick person under medical treatment," late 14c.

Definition

- A person who has been carefully coached to simulate an actual patient so accurately that the simulation cannot be detected by a skilled clinician. In performing the simulation, the SP presents the gestalt of the patient being simulated; not just the history, but the body language, the physical findings, and the emotional and personality characteristics as well (Barrows, 1993).
- An individual trained to portray a patient with a specific condition in a realistic, standardized, and repeatable way and where portrayal/presentation varies based only on learner performance; this strict standardization of performance in a simulated session is what can distinguish standardized patients from simulated patients.
- SPs can be used for teaching and assessment of learners, including but not limited to history/consultation, physical examination, and other clinical skills in simulated clinical environments Association of Standardized Patient Educators (ASPE). SPs can also be used to give feedback and evaluate learner performance (ASPE).
- An individual who is trained to portray a real patient in order to simulate a set of symptoms or problems used for health care education, evaluation, and research (Society for Simulation in Healthcare).

More commonly used in the USA and Canada in large part because SPs participate in high-stakes assessments in which SP responses to the learner are standardized. In recent years, as SPs have been included in more formative teaching scenarios, its meaning has become interchangeable with the term simulated patient.

See also: ACTOR, CONFEDERATE, EMBEDDED PARTICIPANT, ROLE PLAYER, SIMULATED OR STANDARDIZED PATIENT OR PARTICIPANT, SIMULATED PERSON.

Standardized Patient Simulation \ stan-dər-ˌdīz-d \ pā-shənt \ sim-yuh-ley-shuh n \ *noun*

Note: the term Standardized Patient is often synonymous with Simulated Patient

Etym. standard (n.) "authoritative or recognized exemplar of quality or correctness" (late 15c.). Meaning "rule, principal or means of judgment" is from 1560s. That of "definite level of attainment" is attested from 1711 (as in standard of living, 1903).

Etym. patient (n.) "suffering or sick person under medical treatment," late 14c.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A simulation using a person or persons trained to portray a patient scenario or actual patient(s) for health care education (Society for Simulation in Healthcare).
- A modality used for the purpose of practice, learning, assessment, or to gain an understanding of systems or human actions in which standardized (or simulated) patients play a central role.

Standardized/Simulated Participant \ stan-dər-ˌdīz-d \ sim-yə-ˌlāt-id \ pär-ˈti-sə-pənt \ *noun*

See: SIMULATED PATIENT, STANDARDIZED PATIENT

State/States \ stāt\ *noun*

Etym. Meaning "physical condition as regards form or structure" is attested from late 13c. Meaning "mental or emotional condition" is attested from 1530s (phrase state of mind first attested 1749).

Definition

- A term used when programming manikins; state variables may include vital signs, monitor readings, body sounds, and verbalizations made by the simulator.
- [pleural] A sequence of events that change over time. (Sokolowski & Banks, 2011).

Compare to: EVENT

Stochastic \ stə-ˈkas-tik \ *adj*

Etym. (adj.) 1660s, "pertaining to conjecture," from Greek stokhastikos "able to guess, conjecturing," from stokhos "a guess, aim, target, mark," literally "pointed stick set up for archers to shoot at;" the sense of "randomly determined" is from 1934, from German stochastik (1917).

Definition

- Pertaining to a process, model, or variable whose outcome, result, or value depends on chance (Department of Defense Modeling and Simulation Glossary).

Contrast with: DETERMINISTIC

Synthetic Learning Technologies \ sin-ˈthe-tik\ ˈlərn-ing \ tek-ˈnä-lə-jē-z \ *noun*

Etym. synthetic (adj.) 1690s, as a term in logic, "deductive," from French synthétique (17c.) and directly from Modern Latin syntheticus, from Greek synthetikos "skilled in putting together, constructive," from synthetos "put together, constructed, compounded," past participle of syntithenai "to put together" (see synthesis). ***Related:*** Synthetical (1620s in logic).

Etym. learning (n.) Old English leornung "learning, study," from leornian.

Etym. techno - word-forming element meaning "art, craft, skill," later "technical, technology," from Latinized form of Greek tekhno-, combining form of tekhne "art, skill, craft in work; method, system, an art, a system or method of making or doing."

Definition

- The technologies used in synthetic or simulated learning environments, including manikin; computer-based virtual reality; haptics; actors; simulated patients; part-task / task trainers; hybrid; and video (Australian Society for Simulation in Healthcare).

Systems Integration ˈsis-təmz \ ˌin-tə-ˈgrā-shən\ *noun*

Etym. system - (n.) 1610s, "the whole creation, the universe," from Late Latin systema "an arrangement, system," from Greek systema "organized whole, a whole compounded of parts," from stem of synistanai "to place together, organize, form in order," from syn- "together." Meaning "set of correlated principles, facts, ideas, etc." first recorded 1630s.

Etym integration (n.) 1610s, from French intégration and directly from Latin integrationem (nominative integratio) "renewal, restoration." ***Integrate*** - Meaning "to put together parts or elements and combine them into a whole" is from 1802. ***Related:*** Integrated; integrating.

Definition

- An engineering term meaning to bring together the component subsystems into one system that functions together. In health care, the ability to improve the quality of care and patient outcomes through re-engineering of care delivery processes.
- A category of simulation program accreditation that recognizes programs that demonstrate consistent, planned, collaborative, integrated, and iterative application of simulation-based assessment, research, and teaching activities with systems engineering and risk management principles to achieve excellent bedside clinical care, enhanced patient safety, and improved outcome metrics across the health care system(s) (Society for Simulation in Healthcare).

T

Task Trainer / Part-Task Trainer / Partial Task Trainer \ tahsk \ trey-ner \ *noun*

Etym. task (n.) early 14c., "a quantity of labor imposed as a duty," from Old North French tasque (12c., Old French tasche, Modern French tâche). General sense of "any piece of work that has to be done" is first recorded 1590s.

Etym. trainer (n.) c. 1600, "one who educates or instructs,"agent noun from train (v.). Meaning "one who prepares another for feats requiring physical fitness" is from 1823, originally of horse trainers.

Definition

- A device designed to train in just the key elements of the procedure or skill being learned, such as lumbar puncture, chest tube insertion, central line insertion or part of a total system, *for example, ECG simulator* (Center for Immersive and Simulation Based Learning; Levine et al, 2013).
- A model that represents a part or region of the human body such as an arm, or an abdomen. Such devices may use mechanical or electronic interfaces to teach and give feedback on manual skills such as IV insertion, ultrasound scanning, suturing, etc. Generally used to support procedural skills training; however they can be used in conjunction with other learning technologies to create integrated clinical situations (Australian Society for Simulation in Healthcare).

See also: PROCEDURAL SIMULATION, SIMULATOR

Team-based Learning \ ˈtēm \ ˈbāst \ ˈlərn-ing \ *noun*

Etym. team (n.) applied in Old English to groups of persons working together for some purpose, especially "group of people acting together to bring suit;" modern sense of "persons associated in some joint action" is from 1520s. Team spirit is recorded from 1928. Team player attested from 1886, originally in baseball.

Etym. learning (n.) Old English leornung "learning, study," from leornian.

Definition

- A learning method that makes use of small group discussion and collaborative, self-directed study to foster new learning as opposed to imparting information. After a period of preliminary individual accountability, teams of learners compete with each other to learn information and solve problems, This is in distinction to traditional learning in which information is imparted from teacher to learner.
- A learning method with many similarities to Problem Based Learning (PBL). Unlike PBL, where a complex, open-ended, case is given without the information to solve it, team-based learning capitalizes on the use of carefully chosen learning activities based on reading assignments (Michaelson, Parmelee, & McMahon, 2008).

Technical skills \ˈtek-ni-kəl\ˈskil \ *noun*

Etym. technical (adj.) 1610s, "skilled in a particular art or subject," formed in English from technic + al (1), or in part from Greek tekhnikos "of art; systematic," in reference to persons "skillful, artistic," from tekhne "art, skill, craft." The sense narrowed to "having to do with the mechanical arts" (1727).

Etym. skills (n.) late 12c., "power of discernment," from Old Norse skil "distinction, ability to make out, discernment, adjustment," related to skilja (v.) "to separate; discern, understand," from Proto-Germanic *skaljo- "divide, separate" (cognates: Swedish skäl "reason," Danish skjel "a separation, boundary, limit," Middle Low German schillen "to differ," Middle Low German, Middle Dutch schele "separation, discrimination;." Sense of "ability, cleverness" first recorded early 13c.

Definition

- A skill that is required for the accomplishment of a specific task.
- In health care, the knowledge, skill, and ability to accomplish a specific medical task; for example, inserting a chest tube or performing a physical examination.

Technology-Enhanced Health care Simulation (encompasses high-and low-technology health care simulation) \ tek-ˈnä-lə-jē\ in-ˈhan(t)s \ ˈhelth \ ˈker \ sim-yuh-ley-shuh n \ *noun*

Etym. techno - word-forming element meaning "art, craft, skill," later "technical, technology," from Latinized form of Greek tekhno-, combining form of tekhne "art, skill, craft in work; method, system, an art, a system or method of making or doing."

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- A group of materials and devices created or adapted to train health care professionals in a simulated environment. Examples include such diverse products as computer-based virtual reality simulators, high-fidelity and static mannequins, plastic models, live animals, inert animal products, and human cadavers (Cook et al., 2011).
- An educational tool or device with which the learner physically interacts to mimic an aspect of clinical care for the purpose of teaching or assessment.

Trigger(s) \ˈtri-gər \ *noun*

Etym. trigger (n.) "device by means of which a catch or spring is released and a mechanism set in action."

Definition

- An event or events that move the simulation from one state to another.

Typology \tī-ˈpä-lə-jē \ *noun*

Etym. typology (n.) "doctrine of symbols," 1845, from Greek typos.

Related: Typological; typologically.

Definition

- The classification of different educational methods or equipment; for example, 3-dimensional models, computer software, standardized patients, partial-task trainers, or high-fidelity patient simulators (Meakim et al., 2013).

See also: MODALITY, SIMULATED/SYNTHETIC LEARNING METHOD

V

Virtual Patient \ˈvər-chə-wəl \ pā-shənt \ *noun*

Etym. virtual (adj.) The meaning "being something in essence or effect, though not actually or in fact" is from mid-15c., probably via sense of "capable of producing a certain effect" (early 15c.). Computer sense of "not physically existing but made to appear by software" is attested from 1959.

Etym. patient (n.) "suffering or sick person under medical treatment," late 14c.

Definition

- A representation of an actual patient. Virtual patients can take many forms such as software-based physiological simulators, simulated patients, physical manikins, and simulators, (Ellaway, Poulton, Fors et al., 2008).
- A computer program that simulates real-life clinical scenarios in which the learner acts as a health care provider obtaining a history and physical exam, and making diagnostic and therapeutic decisions (Australian Society for Simulation in Healthcare).

Virtual Reality \ ˈvər-chə-wəl \mrē-ˈa-lə-tē \ *noun*

Etym. virtual (adj.) The meaning "being something in essence or effect, though not actually or in fact" is from mid-15c., probably via sense of "capable of producing a certain effect" (early 15c.). Computer sense of "not physically existing but made to appear by software" is attested from 1959.

Etym. reality (n.) 1540s, "quality of being real," from French réalité and directly Medieval Latin realitatem (nominative realitas), from Late Latin realis. Meaning "real existence, all that is real" is from 1640s; that of "the real state (of something)" is from 1680s. Sometimes 17c.-18c. also meaning "sincerity." Reality-based attested from 1960.

Definition

- The use of computer technology to create an interactive three-dimensional world in which the objects have a sense of spatial presence; virtual environment and virtual world are synonyms for virtual reality (Department of Defense Modeling and Simulation Glossary).
- A computer-generated three-dimensional environment that gives an immersion effect.

See also: SIMULATOR

Virtual Reality Environment ˈvər-chə-wəl \rē-ˈa-lə-tē \ in-ˈvī-rə(n)-mənt \ *noun*

Etym. virtual (adj.) The meaning "being something in essence or effect, though not actually or in fact" is from mid-15c., probably via sense of "capable of producing a certain effect" (early 15c.). Computer sense of "not physically existing but made to appear by software" is attested from 1959.

Etym. reality (n.) 1540s, "quality of being real," from French réalité and directly Medieval Latin realitatem (nominative realitas), from Late Latin realis. Meaning "real existence, all that is real" is from 1640s; that of "the real state (of something)" is from 1680s. Sometimes 17c.-18c. also meaning "sincerity." Reality-based attested from 1960.

Definition

- A wide variety of computer-based applications commonly associated with immersive, highly visual, 3D characteristics, that allow the participant to look about and navigate within a seemingly real or physical world. It is generally defined based on the type of technology being used, such as head-mounted displays, stereoscopic capability, input devices, and the number of sensory systems stimulated (Australian Society for Simulation in Healthcare).

Virtual Reality Simulation \ ˈvər-chə-wəl \mrē-ˈa-lə-tē \ sim-yuh-ley-shuh n \ *noun*

Etym. virtual (adj.) The meaning "being something in essence or effect, though not actually or in fact" is from mid-15c., probably via sense of "capable of producing a certain effect" (early 15c.). Computer sense of "not physically existing but made to appear by software" is attested from 1959.

Etym. reality (n.) 1540s, "quality of being real," from French réalité and directly Medieval Latin realitatem (nominative realitas), from Late Latin realis. Meaning "real existence, all that is real" is from 1640s; that of "the real state (of something)" is from 1680s. Sometimes 17c.-18c. also meaning "sincerity." Reality-based attested from 1960.

Definition

- Simulations that use a variety of immersive, highly visual, 3D characteristics to replicate real-life situations and/or health care procedures; virtual reality simulation is distinguished from computer-based simulation in that it generally incorporates physical or other interfaces such as a computer keyboard, a mouse, speech and voice recognition, motion sensors, or haptic devices (Australian Society for Simulation in Healthcare).

Virtual Simulation \ˈvər-chə-wəl \ sim-yuh-ley-shuh n \ *noun*

Etym. virtual (adj.) The meaning "being something in essence or effect, though not actually or in fact" is from mid-15c., probably via sense of "capable of producing a certain effect" (early 15c.). Computer sense of "not physically existing but made to appear by software" is attested from 1959.

Etym. simulation (n.) noun of action from past participle stem of simulare "imitate," from stem of similis "like." Meaning "a model or mock-up for purposes of experiment or training" is from 1954.

Definition

- The recreation of reality depicted on a computer screen (McGovern, 1994).
- A simulation involving real people operating simulated systems. Virtual simulations may include surgical simulators that are used for on-screen procedural training and are usually integrated with haptic device(s) (McGovern, 1994; Robles-De La Torre, 2011).
- A type of simulation that injects humans in a central role by exercising motor control skills *(for example, flying an airplane*), decision skills *(committing fire control resources to action*), or communication skills (*as members of an air traffic control team*) (Hancock et al, 2008).

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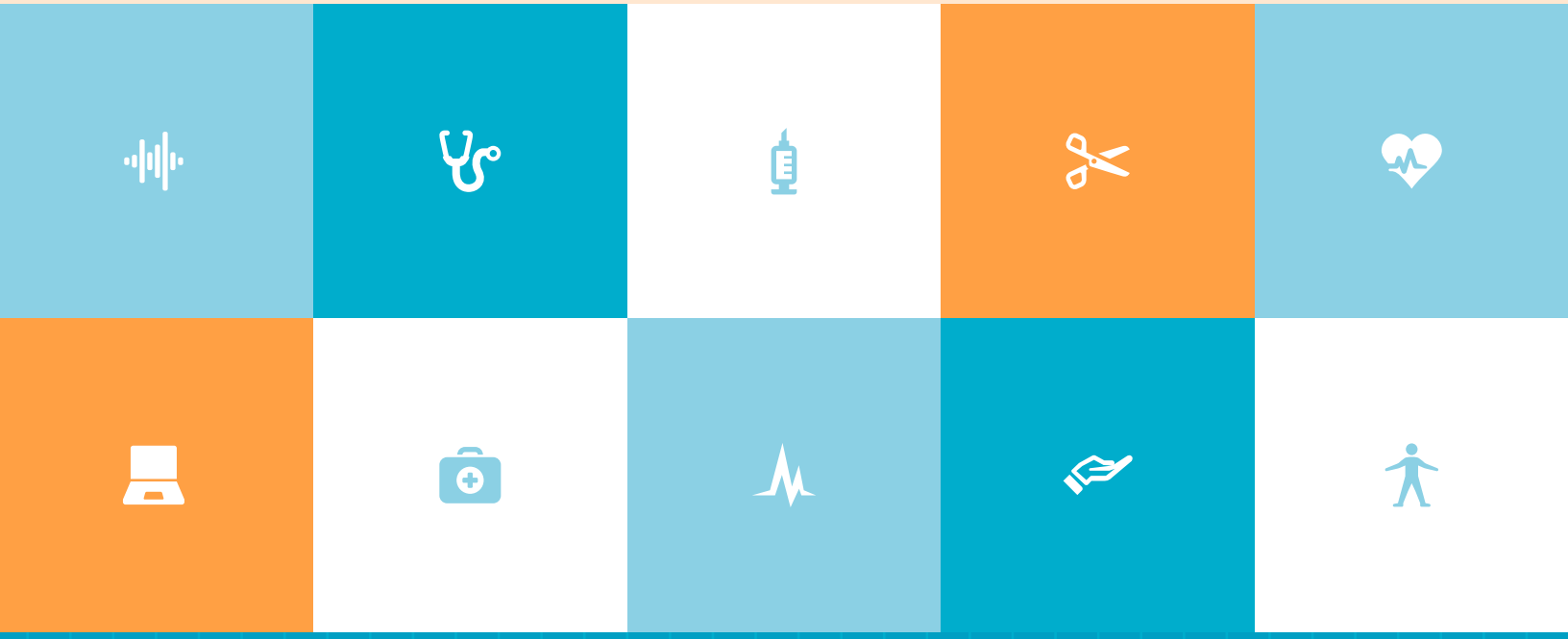

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