MAIN GLOSSARY

for ETPT 2020 ● Fall 2011

Adapted from: Recesso. A. & Orrill, C. (2008).[1]
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acceptable use policy (AUP) Policy established by a school or district to define how students are allowed to use the Internet.

algorithm[2] A process, set of steps or formula for effectively solving a particular problem, ideally in a "foolproof" and efficient way.

ASCII code The American Standard Code for Information Interchange which defines the configuration of 8 digital bits (1s and 0s) that constitute all the letters, numbers and symbols in the "roman" alphabet. For each letter typed on a conventional keyboard, a corresponding byte is transmitted through the processor to memory storage and display on screen. See also *optical character recognition (OCR)*.

assessment Measurement of what someone has learned. Teachers use a wide range of assessment methods, including tests and quizzes, informal observation, and student projects. See also *criterion-referenced* and *norm-referenced* assessment, and *formative assessment*, *pre-assessment*, *post-assessment*, and *summative assessment*.

assistive technology Any device or service that increases the capabilities of people with disabilities.

asynchronous communication Communication in which a message is sent at one time and received at some later time, as with e-mail. See also *synchronous communication*.

augmentative communication Speech or writing enhanced by special tools or techniques, such as by an electronic communication board.

augmented reality Setting in which technology adds information to the learner's actual surroundings. For example, students might use a headset or hand-held computer to enhance their experiences with a museum exhibit.

behavioral objective Statement that explains what a student will (know and) be able to do as a result of a learning activity. See also *intended learning outcome*.

behaviorism A learning theory, developed by B. F. Skinner and others, that people learn through a series of reinforcements, whether positive or negative.

blog (short for "weblog") An online journal in which a user posts chronological, up-to-date events. A blog is kept in chronological order and is generally topical, relating to a single person, group, cause, or theme.

bulletin board See *discussion board*.

cognitive information-processing theory A theory of learning that views the mind as an information processing device in which information can filed away and retrieved. Learning is characterized by moving information from short-term memory to long-term memory.

concept map Diagram that connects pieces of information in a way that shows the relationships among them; visual representation of the links between ideas.

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[1] Recesso. A. & Orrill, C. (2008). **Integrating technology into teaching: The technology and learning continuum**. Boston, MA: Houghton Mifflin.[ISBN 978-0735622784]

[2] See http://www.webopedia.com/TERM/A/algorithm.html

constructivism A set of learning theories that asserts that each person creates their own understandings through experiences with information and/or people. Learning occurs as the learner integrates new understandings into their existing ideas about the content or context. It's been suggested that *programmed instruction* technology could be combined with constructivism and applied in tutorial design.[3]

content analysis Review of the content knowledge that students should learn in a given lesson-a useful step in writing objectives for the lesson. Content analysis often begins with review of the standards for the appropriate grade and content area.

content standard Standard that defines a set of concepts that students should have learned by a particular point in their learning career.

cooperative learning/collaborative learning Teaching strategy in which small groups of learners (often at different ability levels) engage in a variety of activities together.

criterion-referenced assessment A model whereby the criteria and standards of success are determined in advance. In this model "every kid *can* be a winner".

culminating performance Final stage of the learning continuum, in which students complete specified tasks to display their new knowledge and understanding. See also *summative assessment*.

demonstration Description or explanation of information or a process. Teachers are using demonstration techniques when they show the class examples or experiments.

desktop publishing (DTP) The production of documents using "page layout" software on a personal computer, often having a more complex ("professional") layout than can be produced with more limited word processing software.

development tool Tool that helps students develop their own projects and presentations. Typically includes software for creating and editing images, preparing web pages, and constructing multimedia projects.

diagnostic assessment See *preassessment*.

digital manipulative Computerized version of a traditional manipulative, such as Cuisenaire rods.

discussion Examination of information by argument, comment, or debate. Typically, a teacher frames questions around a topic being covered in class and asks students to discuss possible answers.

discussion board Site on the Internet (or other network) that allows people to communicate with others using simple text messages; also known as a bulletin board or message board.

distance education/distance learning Process of using technology to allow students to learn from teachers and other experts who are not at the same physical site.

electronic whiteboard Interactive, whiteboard-like surface that allows teacher and students to point at items and even draw on the board with a special stylus. Work on the board can also be captured and saved for later analysis.

Events of Instruction Model (Gagné)[4] A sequence of *instructional* events/activities that are matched to *learning* events/activities so as to facilitate/optimize learning.

[3] See http://www.pgce.soton.ac.uk/IT/Learning/Constructivism/CAIandConstruct.htm

[4] See http://education.calumet.purdue.edu/vockell/edPsybook/Edpsy3/edpsy3_instruction.htm

Evidence Based Decision Support (EBDS) Method of assessing how one's lessons work in practice and increasing understanding of teaching. With EBDS, the teacher collects evidence in the classroom (such as videotapes of teaching and samples of student work) and then evaluates that evidence systematically.

exit standard Expected outcome by the time a student graduates from high school.

facilitation Approach to teaching in which the teacher acts as a guide rather than as a mere deliverer of content. Students are encouraged to take control of their own learning process.

feedback loop The essential component in a *system* that facilitates system improvement to achieve desired results through a regular (sometimes continuous) flow of information on system performance.

FireWire A computer hardware interface standard offering high-speed communication between an external device and a personal computer; widely used for transferring video from digital camcorders to computers.

formative assessment Assessment conducted *during* a learning unit to help the teacher gauge how students are progressing and better facilitate learning processes.

goal See *learning goal*

guided learning In the learning continuum, a transitional stage between the initiating learning activity and the culminating performance. Students are "guided" through the application and refinement of the knowledge and skills that were introduced in the initiating activity.

hand-held computer Small computer that allows students to capture data, write, or type (with a separate keyboard), calculate, and engage with a variety of special software packages developed for educational purposes; also known as a *personal digital assistant (PDA)* and more recently a *smartphone*.

HDMI (High-Definition Multimedia Interface) A compact audio/video interface for transmitting uncompressed digital data – e.g., from a digital video disc (DVD) player to a high definition television (HDTV) display.

hypertext Text that links to something else-for instance, a phrase on a web page that takes the user to another page when the user clicks on it with the mouse.

Hypertext Markup Language (HTML) Coding used on web pages to tell the web browser how to display the content.

immersive technology Technology that immerses or envelops the student in a virtual environment for learning. One example is a flight simulator that mimics the total experience of flying a plane. See also *non-immersive technology*.

individualized education program (IEP) Written educational plan required for each student covered by the Individuals with Disabilities Education Act. It is developed and monitored by a team of teachers, specialists, and the child's parents. Among other aspects of the student's needs, the IEP identifies assistive technology devices and services that must be provided.

informal learning environment (ILE) Setting or organization, outside of formal schooling, whose mission includes learning and development. Examples include after-school clubs, museums, and summer camps.

initiating activity Activity that introduces students to what they will be doing in the learning unit.

inquiry-based learning Approach in which students learn by actively investigating one or more essential questions (e.g., how, why). By engaging in research and other activities to answer the questions, students develop a meaningful understanding of concepts and practices.

instructional game Entertaining activity that helps students gain knowledge and skills through active participation. When such games use computer technology, they are often called *edutainment*.

intended learning outcome (ILO) A statement that clearly defines expected performance indicative of understanding, attitude development, or motor skill development, under a specified set of conditions and with clearly specified standards for assessment. See also *behavioral objective*.

Internet protocol camera Type of video camcorder designed to connect directly to an Ethernet wall jack. Using the Internet or another network, it can deliver video from remote locations to a designated monitor or server.

keypal Penpal who communicates by e-mail or other social networking media.

K-W-L chart Three-column chart in which students list what they already *Know*, what they *Want* to know, and, at the end of the lesson. what they have *Learned*.

learner-centered environment Environment that attempts to meet the known conditions under which people learn.

Learner-Centered Psychological Principles[5] Fourteen principles established by the American Psychological Association that focus on helping the learner create meaningful, coherent representations of knowledge.

learning community Group of educators who get together regularly, either in person or online, to discuss issues and practices. Often the members want to improve both their own skills and the overall education offered in their schools.

learning environment Space or spaces where learners interact with tools, materials, and resources. Broadly, it is the entire context in which learning is established and supported.

learning goal A general expression of the types of "understanding", "appreciation", and "motor abilities" to be achieved through one or more learning processes.

learning hierarchy A configuration of *intended learning outcomes* (a.k.a., objectives) organized according to prerequisite order, that represent a learning sequence or lattice toward attainment of a learning goal.

learning *in situ* See *situated learning*.

learning objective See *intended learning outcome*.

[5] See http://www.avln.org/olexpedition/apa.html

lesson plan A teacher's detailed description of the course of instruction for an individual lesson. Formal models often include learning goal(s), specific intended learning outcome(s), related assessment(s), descriptions of learning activities and related resources. Sometimes carefully scripted, may include a timetable.

listserv Computerized mailing list that allows a message to be sent simultaneously to everyone on the list.

mastery learning[6] Way of thinking about learning, popularized by Benjamin Bloom, in which intended learning outcomes are specified and shared in advance and learning activity time is allowed to vary in order to ensure (eventual) success. Assumes that a student who has mastered a topic, idea, or concept is able to demonstrate that knowledge at least a certain portion of the time, for example, as completing a learned task according to a checklist of steps.

meaningful learning Students' active development of deep understanding of complex concepts that are central to the learning domain and relevant to their everyday life.

message board See *discussion board*.

metacognition Learners' understanding of their own thinking and learning processes.

microworld Simulation program designed to allow the user to explain ideas, test assumptions, and explore concepts.

modeling (instructional) Approach in which the teacher deliberately demonstrates a process to show others how to use it.

modeling (technological) Creating a representation of an object, concept, or process to help learners understand it. For instance, mathematics software can create interactive graphic models that illustrate fractional proportions.

multiculturalism Perspective that different ethnic groups should preserve their own culture while interacting peacefully with other cultures in the nation.

multimedia Communication format (usually created with/disseminated by computer) that combines at least two different types of media, such as text, sound, still images, and video.

multiple intelligences Theory, developed by Howard Gardner, that people have at least nine different kinds of intelligence (such as visual/spatial intelligence, verbal intelligence. and bodily/kinesthetic intelligence) as compared to only one general intelligence. The implication is that instructional activities should be designed for various kinds of intelligence, so that students with different learning preferences can all benefit.

National Educational Technology Standards (NETS) Standards for technology integration developed by the International Society for Technology in Education (ISTE). There are NETS for students, teachers, and administrators.

non-immersive technology Technology that does not transport the learner to a virtual "place" but does simulate another environment. See also *immersive technology.*

[6] See http://teach.valdosta.edu/whuitt/files/mastlear.html

norm-referenced assessment A model whereby the criteria and standards of success are determined after examining the "spread of scores" to determine an "average" and then gauge degrees of success and failure in light of the "norm". Also called *standardized tests*. In this model, only those scoring above the average can be "winners".

optical character recognition (OCR) Process of using software to convert scanned images of printed material (initially a bit-map pattern of dots) into editable text (ASCII code) to display in a text editor or word processor. See also *ASCII code*.

performance assessment Way of measuring learning by assigning an authentic task to a learner-that is, a task that represents or closely models an activity the student might undertake in real life.

performance standard Standard that attempts to make content expectations clear by defining how students should demonstrate their proficiency in the skills and knowledge framed by *content standards* and expressed in *intended learning outcomes (ILOs)*.

personal digital assistant (PDA) See *hand-held computer*.

podcast A combination of the words "pod" – from Apple's iPod – and "broadcasting" and refers to dissemination of media files over the Internet. Sometimes called a "webcast" or "netcast". Such files can be played using any computer that can play media files.

post-assessment Assessment that takes place when formal learning is completed - for instance, at the end of a learning unit - allowing the teacher to determine whether intended learning outcomes have been achieved (or whether certain remedial efforts should be made). Ideally, matched to preassessments (via ILOs) so that real learning progress can be gauged.

PDF (Portable Document Format) Common format (across multiple computer platforms) for print documents stored for Internet use; allows the user to see the document with all the original formatting intact, regardless of which computer system is being used.

pre-assessment Assessment that takes place before formal learning begins - for instance, at the beginning of a learning unit - allowing the teacher to discover what students already know and to structure the lesson accordingly. Also known as *diagnostic assessment*.

presentation Introduction, offering, delivering, and exhibition of information. Presentation is a common method for teachers at the beginning of a learning unit.

probe (n.) Device for measuring a particular variable, such as temperature, voltage, or oxygen level. Electronic probes can download their information into a computer or special calculator.

probe (v.) An instructional technique for determining the breadth and depth of a student's understanding (e.g., of a concept).

problem-based learning Approach in which students learn by working to find a solution to a problem that is complex and tied to the real world.

problem solving Process of attempting to resolve a matter involving doubt, uncertainty, or difficulty.

process standard Standard that defines methodologies, skills, and ways of thinking that are important to a discipline.

productivity tool Tool that supports people in doing tasks that would otherwise have to be done in a different, usually more laborious, way. In educational settings, productivity tools often include such computer applications as Internet search engines, word processors, spreadsheets, databases, presentation software, concept-mapping software, and more.

programmed instruction (PI) Behaviorist instructional approach developed by B. F. Skinner in the 1950s, in which "teaching machines" allowed learners to work through a body of information in a prescribed way, moving on to new material once they had mastered the previous material.[7] Early on, it was limited by the delivery mechanisms available (e.g., booklets), PI principles and techniques can be far better implemented using computers.

reflection activity Activity that gives students an opportunity to stop and think about what they have learned. By conveying their current understanding, they solidify it and highlight areas where things are not yet making sense.

rubric Scoring scale for assessing students' performance on a particular task, such as an essay, project, or test. Rubrics are often shared with the students (or even created in collaboration with the class) so that students know exactly how their work is being measured.

scaffolding Supports put into place to help a learner make appropriate sense of learning and to make a complex task do-able. For example, in designing a roller coaster, there are hundreds of considerations to be made, ranging from the height of the hills to the materials used. To scaffold a learning environment so that students can design a roller coaster, a teacher may choose to have students consider only height, speed, gravity, and force. As students learn more, scaffolds are slowly withdrawn.

schema (plural: schemata) The brain's structure for organizing knowledge. We have schemata for concepts, skills, and other things we encounter in life.

SCORM ("Sharable Content Object Reference Model")[8] A set of technical standards for e-learning software products (developed by the Department of Defense); governs how online learning content and Learning Management Systems (LMSs) communicate with each other.

screen reader Text-to-speech device that reads a computer display aloud.

search engine Software tool for locating information in documents on the Internet. Sends out a "spider" searching documents for specified "keywords" that have been read by an "indexer"; then presents a list of those documents where the keywords were found.

[7] See examples: http://academics.rmu.edu/~tomei/ed711psy/b_pgmin.htm
[8] See http://scorm.com/scorm-explained/

server Computer that deals with information requests from other computers. For instance, when one accesses a web page, a web server sends the files for that page to one's own computer for viewing.

simulation Imitation of a process, knowledge, or skill to be learned. In computer applications, a simulation is a program that provides a realistic facsimile of an environment that students could not access in real life.

situated learning Learning that takes place in a realistic environment, one that closely replicates the setting in which the learning will eventually be applied; also known as learning *in situ*.

streaming media Continuous video or audio content that can be accessed on a computer.

summative assessment Assessment that occurs at the end of a project or a series of learning units to measure major/sustained learning has occurred.

synchronous communication Communication that occurs simultaneously, in "real time," as in online chat sessions. See also a*synchronous communication*.

system A set of interdependent components (inputs) that interact regularly (via processes) to perform a set of tasks (outputs), as modified through results (feedback), which accomplish some goal.

systemic thinking Approaching problems or approaching goals by considering intended results, feedback mechanisms, then formal processes, and necessary inputs.

Taxonomy of the Cognitive Domain (a.k.a., Bloom's taxonomy)[9] A scheme for the classification of certain types of educational goals, developed by a committee of five college and university examiners from the American Psychological Association, that organizes learning into levels according to the sophistication of mental effort necessary to meet a given goal. Six levels were identified, ranging from Knowledge (the lowest level and prerequisite to those above) to Evaluation (the highest level). See also Gagne's *Types of Learning*.

teacher-as-facilitator See *facilitation*.

Technology and Learning Continuum Model Model for developing a technology-integrated learning unit. It divides the learning continuum into three stages – initiating activity, guided learning. and culminating performance-and conceives of the instructional design process as comprising objectives, instructional strategies, choice of possible technologies, and assessment.

technology-based learning environment Environment that engages students in learning through computer applications. Any non-computer activities draw from and build on the computer activities.

technology-enhanced learning environment Environment that uses computers and related technology to augment the teaching and learning activities of the classroom. These are less dependent on computers than are technology-based learning environments.

telementoring Process of pairing a student with a mentor to explore a particular topic via e-mail.

text-to-speech software Programs that read written material to the user.

[9] See http://projects.coe.uga.edu/epltt/index.php?title=Bloom%27s_Taxonomy

tutorial A formal (usually self-instructional) presentation of information, focusing on key terminology, key concepts and processes, which are best accompanied by examples (and non-examples).[10]

Types of Learning (Gagné)[11] A scheme for the classification of learned capabilities – ranging from Verbal Information to Cognitive Strategies, Attitudes, and Motor Skills.

universal serial bus (USB) Interface standard for connecting devices, such as key drives and digital cameras, to a computer. Usually multiple such devices can be connected simultaneously.

videoconferencing Audio and video communication in real time among multiple people in multiple remote locations. A simple videoconferencing system can be set up with small webcams, an Internet link, and free computer software.

video club Gathering in which several teachers review and discuss video clips of their own teaching in order to improve their practice.

video ethogram Video footage of animal behavior combined with coding to describe what is seen in the video.

video game Game played on a computer or other gaming platform. Better video games provide students with the opportunity to solve problems, make decisions, and alter the outcomes of their efforts.

virtual reality Simulation of three-dimensional, real life environments through computers and other technology.

Virtual Reality Modeling Language (VRML) Computer language used for virtual reality environments, which allows developers to create graphical representations and screens where students can interact with objects and even with other characters.

webcam Any digital camera (usually video rather than still) that supplies images for transmission via a website.

weblog See *blog*.

WebQuest Inquiry-based instructional approach in which students use web resources to accomplish a defined task. Usually the challenge itself is presented to students by means of a web page, and then they are guided to appropriate web-based sources of information.

Web3D Shorthand for three-dimensional virtual reality modeling on the World Wide Web, such as environments created with Virtual Reality Modeling Language.

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[10] See http://www.dailyblogtips.com/11-essential-tips-to-writing-the-ultimate-tutorial/
[11] See http://my-ecoach.com/project.php?id=12152&project_step=28465