



Tomorrow's Doctors, Tomorrow's Cures®

Curriculum Inventory Standardized Instructional and Assessment Methods and Resource Types

Suggested citation:

MedBiquitous Curriculum Inventory Working Group Standardized Vocabulary Subcommittee. (2015). *Curriculum Inventory standardized instructional and assessment methods and resource types* (November 2015 version). Washington, DC: Association of American Medical Colleges.

Instructional Methods

[Case-Based Instruction/Learning](#)
[Clinical Experience - Ambulatory](#)
[Clinical Experience - Inpatient](#)
[Concept Mapping](#)
[Conference](#)
[Demonstration](#)
[Discussion, Large Group \(>12\)](#)
[Discussion, Small Group \(<12\)](#)
[Games](#)
[Independent Learning](#)
[Journal Club](#)
[Laboratory](#)
[Lecture](#)
[Mentorship](#)
[Patient Presentation - Faculty](#)
[Patient Presentation – Learner](#)
[Patient Presentation - Patient](#)
[Peer Teaching](#)
[Preceptorship](#)
[Problem-Based Learning \(PBL\)](#)
[Reflection](#)
[Research](#)
[Role Play/Dramatization](#)
[Self-Directed Learning](#)
[Service Learning Activity](#)
[Simulation](#)
[Team-Based Learning \(TBL\)](#)
[Team-Building](#)
[Tutorial](#)
[Ward Rounds](#)
[Workshop](#)

Assessment Methods

[Clinical Documentation Review](#)
[Clinical Performance Rating/Checklist](#)
[Exam - Institutionally Developed, Clinical Performance](#)
[Exam - Institutionally Developed, Written/Computer-based](#)
[Exam - Institutionally Developed, Oral](#)
[Exam - Licensure, Clinical Performance](#)
[Exam - Licensure, Written/Computer-based](#)
[Exam - Nationally Normed/Standardized, Subject Multisource Assessment](#)
[Narrative Assessment](#)
[Oral Patient Presentation](#)
[Participation](#)
[Peer Assessment](#)
[Portfolio-Based Assessment](#)
[Practical \(Lab\)](#)
[Research or Project Assessment](#)
[Self-Assessment](#)
[Stimulated Recall](#)
[Assessment Methods](#)

Resource Types

[Animation](#)
[Audience Response System](#)
[Audio](#)
[Cadaver](#)
[Clinical Case](#)
[Distance Learning - Asynchronous](#)
[Distance Learning - Synchronous](#)
[Educational Technology](#)
[Electronic Health/Medical Record EHR/EMR](#)
[Film/Video](#)
[Key Feature](#)
[Mannequin](#)
[Medical Images](#)
[Mobile Application](#)
[Patient – Receiving Clinical Care](#)
[Patient – Teaching](#)
[Plastinated Specimens](#)
[Written or Visual Media \(or Digital Equivalent\)](#)
[Scenario](#)
[Searchable Electronic Database](#)
[Standardized/Simulated Patient \(SP\)](#)
[Task Trainer](#)
[Ultrasound](#)
[Virtual Patient](#)
[Virtual/Computerized Laboratory](#)
[Wet Laboratory](#)

Instructional Methods

Instructional Method	Definition / More information
Case-Based Instruction/ Learning	<p>Use of patient cases (actual or theoretical) to stimulate discussion, questioning, problem solving, and reasoning on issues pertaining to the basic sciences and clinical disciplines (Anderson, 2010)</p> <p>Synonymous with/Includes: Case Study</p> <p>Does not include: Conference; Discussion, Small Group (≤12); Patient Presentation - Faculty; Patient Presentation - Learner; Problem-Based Learning (PBL); Simulation; Team-Based Learning (TBL)</p> <p>Note(s): Distinguished from Simulation in that, in CBL, learner is not necessarily practicing the role of care provider, yet in Simulation, learner is practicing some aspect(s) of provider role.</p>
Clinical Experience - Ambulatory	<p>Practical experience(s) in patient care and health-related services carried out in an ambulatory/outpatient setting (LCME, 2011) where actual patients are studied and treatment and/or counseling is given (ERIC, 1968 & 1981; <i>CI Standardized Vocabulary Subcommittee</i>)</p> <p>Synonymous with/Includes: Clinical Reasoning; Communication Skills; Community-Based; Outpatient; Patient Care; Patient Care Activity; Problem Solving</p>
Clinical Experience - Inpatient	<p>Practical experience(s) in patient care and health-related services carried out in an inpatient setting (LCME, 2011) where actual patients are studied and treatment and/or counseling is given (ERIC, 1968 & 1981; <i>CI Standardized Vocabulary Subcommittee</i>)</p> <p>Synonymous with/Includes: Clinical Reasoning; Communication Skills; Patient Care; Patient Care Activity; Problem Solving</p>
Concept Mapping	<p>Technique [that] allows learners to organize and represent knowledge in an explicit interconnected network. Linkages between concepts are explored to make apparent connections that are not usually seen. (Weiss & Levinson, 2000, citing Novak & Gowin, 1984)</p>
Conference	<p>Departmentally-driven and/or content-specific presentations by clinical faculty/professionals, residents, and/or learners before a large group of other professionals and/or learners (e.g., Mortality and Morbidity, or "M & M," Conference--Biddle & Oaster, 1990--and Interdisciplinary Conference--Feldman, 1999; also see Cooke, Irby, & O'Brien, 2010b)</p> <p>Synonymous with/Includes: Grand Rounds; Mortality/Morbidity (M & M) Conference; X-Ray; Tumor Board</p> <p>Does not include: Discussion, Large Group (>12); Lecture</p>
Demonstration	<p>A description, performance, or explanation of a process, illustrated by examples, observable action, specimens, etc. (Dictionary.com, n.d.)</p> <p>Synonymous with/Includes: Autopsy</p> <p>Does not include: Laboratory</p>
Discussion, Large Group [>12]	<p>An exchange (oral or written) of opinions, observations, or ideas among a Large Group [more than 12 participants], usually to analyze, clarify, or reach conclusions about issues, questions, or problems (ERIC, 1980)</p> <p>Does not include: Conference</p>
Discussion, Small Group [≤12]	<p>An exchange (oral or written) of opinions, observations, or ideas among a Small Group [12 or fewer participants], usually to analyze, clarify, or reach conclusions about issues, questions, or problems (ERIC, 1980)</p> <p>Does not include: Case-Based Learning/Instruction; Conference; Problem-Based Learning (PBL); Team-Based Learning (TBL); Tutorial; Workshop</p>
Games	<p>Individual or group games that have cognitive, social, behavioral, and/or emotional, etc., dimensions which are related to educational objectives (ERIC, 1966a)</p>
Independent Learning	<p>Instructor-/ or mentor-guided learning activities to be performed by the learner outside of formal educational settings (classroom, lab, clinic) (Bowen & Smith, 2010); Dedicated time on learner schedules to prepare for specific learning activities, e.g., case discussions, TBL, PBL, clinical activities, research project(s)</p> <p>Synonymous with/Includes: Independent Study; Self-Study; Homework</p> <p>Does not include: Self-Directed Learning</p>

Journal Club	<p>A forum in which participants discuss recent research papers from field literature in order to develop critical reading skills (comprehension, analysis, and critique) (Cooke, Irby, & O'Brien, 2010a; Mann & O'Neill, 2010; Woods & Winkel, 1982)</p> <p>Synonymous with/Includes: Critical Reading</p> <p>Note(s): “[A] forum for the education of residents in the techniques of critical reading, that is, the ability to understand the format of an article, analyze the process by which the study was done, recognize the limitations of the work, and critique the results and interpretation” (Woods & Winkel, 1982); “[A] forum for discussion of recent papers in [a] specialty [and] mechanism for residents [and/or learners] to learn how to assess the quality and import of clinical research papers” (Cooke, Irby, & O'Brien, 2010a)</p>
Laboratory	<p>Hands-on or simulated exercises in which learners collect or use data to test and/or verify hypotheses or to address questions about principles and/or phenomena (LCME, 2011)</p> <p>Synonymous with/Includes: Autopsy; Anatomy Lab; Gross Lab; Histology Lab; Wet Lab</p> <p>Does not include: Demonstration</p> <p>Note(s): LCME ED-12: “[P]ractical opportunities for the direct application of the scientific method, accurate observation of biomedical phenomena, and critical analysis of data...[C]ould include hands-on or simulated (e.g., computer-based) exercises in which medical students either collect or use data to test and/or verify hypotheses or to address questions about biomedical principles and/or phenomena” (LCME, 2011)</p>
Lecture	<p>An instruction or verbal discourse by a speaker before a large group of learners (Institute for International Medical Education, 2002)</p> <p>Synonymous with/Includes: Didactic; Recording of a lecture</p> <p>Does not include: Conference; Discussion, Large Group (>12)</p>
Mentorship	<p>The provision of guidance, direction and support by senior professionals to learners or more junior professionals (U.S. National Library of Medicine, 1987)</p> <p>Synonymous with/Includes: Advising; Career Development; Coaching; Professional Development</p> <p>Does not include: Preceptorship</p>
Patient Presentation - Faculty	<p>A presentation by faculty to faculty, residents, and/or other learners of patient findings, history and physical, differential diagnosis, treatment plan, etc. (Wiener, 1974; CI Standardized Vocabulary Subcommittee)</p>
Patient Presentation - Learner	<p>A presentation by a learner or learners to faculty, resident(s), and/or other learners of patient findings, history and physical, differential diagnosis, treatment plan, etc. (Wiener, 1974)</p>
Patient Presentation - Patient	<p>A presentation by a patient to faculty, residents, and other learners that tells or recounts the patient’s experience (CI Standardized Vocabulary Subcommittee)</p>
Peer Teaching	<p>Learner-to-learner instruction for the mutual learning experience of both "teacher" and "learner"; may be "peer-to-peer" (same training level) or "near-peer" (higher-level learner teaching lower-level learner) (Soriano et al., 2010)</p> <p>Synonymous with/Includes: Near-Peer Instruction; Peer Instruction; Peer Teaching; Peer Tutoring; PeerAssisted Learning</p>
Preceptorship	<p>Practical experience in medical and health-related services wherein the professionally-trained learner works under the supervision of an established professional in the particular field (U. S. National Library of Medicine, 1974)</p> <p>Synonymous with/Includes: Externship</p> <p>Does not include: Mentorship; Service Learning Activity</p>
Problem-Based Learning (PBL)	<p>The use of carefully selected and designed patient cases that demand from the learner acquisition of critical knowledge, problem solving proficiency, self-directed learning strategies, and team participation skills as those needed in professional practice (Eshach & Bitterman, 2003; see also Major & Palmer, 2001; Cooke, Irby, & O'Brien, 2010b; Barrows & Tamblyn, 1980)</p> <p>Does not include: Case-Based Instruction/Learning; Discussion, Small Group (≤12); Team-Based Learning (TBL)</p>

Reflection	<p>Examination by the learner of his/her personal experiences of a learning event, including the cognitive, emotional, and affective aspects; the use of these past experiences in combination with objective information to inform present clinical decision-making and problem-solving (Mann, Gordon, & MacLeod, 2009; Mann & O'Neill, 2010); reflecting on patients' experiences using narrative and/or storytelling (<i>Advances in Health Sciences Education</i>, 18(4), 727-743). http://link.springer.com/article/10.1007/s10459-012-9411-y</p> <p>Synonymous with/Includes: Journaling, Narrative, Story-telling</p>
Research	<p>Short-term or sustained participation in research. <i>Research</i> is defined as a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities. (U.S. Department of Health & Human Services 45 CFR 46 http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html)</p>
Role Play/ Dramatization	<p>The adopting or performing the role or activities of another individual</p> <p>Synonymous with/Includes: Practicing Skills (with peers)</p> <p>Does not include: Simulation (as with Simulated/Standardized Patient) – See Resource Types</p>
Self-Directed Learning	<p>Learners taking the initiative for their own learning: diagnosing needs, formulating goals, identifying resources, implementing appropriate activities, and evaluating outcomes (Garrison, 1997; Spencer & Jordan, 1999)</p> <p>Synonymous with: Self-Study</p> <p>Does not include: Independent Learning; Independent Study, PBL, TBL</p>
Service Learning Activity	<p>A structured learning experience that combines community service with preparation and reflection (LCME, 2011)</p> <p>Synonymous with/Includes: Community Service</p>
Simulation	<p>A method used to replace or amplify real patient encounters with scenarios designed to replicate real health care situations, using lifelike mannequins, physical models, standardized patients, or computers (Passiment, Sacks, & Huang, 2011)</p> <p>Does not include: Role Play/Dramatization</p>
Team-Based Learning (TBL)	<p>A form of collaborative learning that follows a specific sequence of individual work, group work and immediate feedback; engages learners in learning activities within a small group that works independently in classes with high learner-faculty ratios (Anderson, 2010; Team-Based Learning Collaborative, n.d.; Thompson, Schneider, Haidet, Perkowski, & Richards, 2007)</p> <p>Does not include: Case-Based Instruction/Learning; Discussion, Small Group (≤12); Problem-Based Learning (PBL)</p>
Team-Building	<p>Workshops, sessions, and/or activities contributing to the development of teamwork skills, often as a foundation for group work in learning (PBL, TBL, etc.) and practice (interprofessional/-disciplinary, etc.) (Morrison, Goldfarb, & Lancken, 2010)</p>
Tutorial	<p>Instruction provided to a learner or small group of learners by direct interaction with an instructor (ERIC, 1966c)</p>
Ward Rounds	<p>An instructional session conducted in an actual clinical setting, using real patients or patient cases to demonstrate procedures or clinical skills, illustrate clinical reasoning and problem-solving, or stimulate discussion and analytical thinking among a group of learners (Bowen & Smith, 2010; Wiener, 1974)</p> <p>Synonymous with/Includes: Attending Rounds; Bedside Rounds; Bedside Teaching; Teaching Rounds; Student group visit as part of "Doctoring" or "Physical Diagnosis" course</p> <p>Does not include: Clinical Experience - Ambulatory; Clinical Experience - Inpatient; Patient Presentation - Faculty; Patient Presentation – Learner</p>
Workshop	<p>A brief intensive educational program for a relatively small group of people that focuses especially on techniques and skills related to a specific topic (U. S. National Library of Medicine, 2011)</p> <p>Synonymous with/Includes: Seminar</p>

Note: The concepts of **Flipped Classroom**, **Clinical Correlation**, **Clinical Case Modules**, **Case Inventories**, and similar terms that describe a particular use of multiple instructional methods or specific types of clinical documentation are not included in this list. It is the opinion of the MedBiquitous Curriculum Inventory Working Group Standardized Vocabulary

Subcommittee that these terms are reflected by or are combinations of existing Instructional Methods or Resources.

Assessment Methods (All assessment methods are Formative OR Summative)

Assessment Method (may be formative or summative)	Definition / More information
Clinical Documentation Review	<p>The review and assessment of clinical notes and logs kept by learners as part of practical training in the clinical setting (Bowen & Smith, 2010; Irby, 1995)</p> <p>Synonymous with/Includes: Case Log; Chart Review; Clinical Encounter Log; Patient Workup</p> <p>Does not include: Portfolio-Based Assessment</p>
Clinical Performance Rating/ Checklist	<p>A non-narrative assessment tool (checklist, Likert-type scale, other instrument) used to note completion or achievement of learning tasks (MacRae, Vu, Graham, Word-Sims, Colliver, & Robbs, 1995; Turnbull, Gray, & MacFadyen, 1998) also see “Direct Observations or Performance Audits,” Institute for International Medical Education, 2002)</p> <p>Synonymous with/Includes: Rating Scale; Likert Scale; Reflection Feedback; Video Performance Rating; <i>Rubric</i></p> <p>Does not include: Multisource Assessment; Peer Assessment; Self-Assessment</p>
Exam - Institutionally Developed, Clinical Performance	<p>Practical performance-based examination developed internally to assess problem solving, clinical reasoning, decision making, and[or] communication skills (LCME, 2011) (<i>Includes observation of learner or small group by instructor</i>)</p> <p>Synonymous with/Includes: OSCE; Virtual Patient; Practical Exam; Internal (practical) Exam; Image Analysis; Script Concordance; Simulation Exam; MiniCEX; CEX; SCEE (Simulated Clinical Encounter Examination)</p> <p>Note(s): LCME ED-26. “A medical education program must have a system in place for the assessment of medical student achievement throughout the program that employs a variety of measures of knowledge, skills, behaviors, and attitudes. Assessments of medical student performance should measure the retention of factual knowledge; the development of the skills, behaviors, and attitudes needed in subsequent medical training and practice; and the ability to use data appropriately for solving problems commonly encountered in medical practice” [emphasis added] (LCME, 2011)</p>
Exam - Institutionally Developed, Written/ Computerbased	<p>Examination utilizing various written question-and-answer formats (multiple-choice, short answer, essay, etc.) which may assess learners' factual knowledge retention; application of knowledge, concepts, and principles; problem-solving acumen; and clinical reasoning (Cooke, Irby, & O'Brien, 2010b; LCME, 2011)</p> <p>Synonymous with/Includes: Written Exam; Internal (written) Exam; MCQ; Multiple Choice; Quiz; Script Concordance</p> <p>Note(s): LCME ED-26. “A medical education program must have a system in place for the assessment of medical student achievement throughout the program that employs a variety of measures of knowledge, skills, behaviors, and attitudes. “Assessments of medical student performance should measure the retention of factual knowledge [emphasis added]; the development of the skills, behaviors, and attitudes needed in subsequent medical training and practice; and the ability to use data appropriately for solving problems commonly encountered in medical practice” [emphasis added] (LCME, 2011).</p>
Exam - Institutionally Developed, Oral	<p>Verbal examination developed internally to assess problem solving, clinical reasoning, decision making, and[or] communication skills (LCME, 2011)</p>
Exam - Licensure, Clinical Performance	<p>Practical, performance-based examination developed by a professional licensing body to assess clinical skills such as problem solving, clinical reasoning, decision making, and communication, for licensure to practice in a given jurisdiction (e.g., USMLE for the United States); typically paired with a written/computer-based component (MCC, 2011a & 2011c; NBOME, 2010b; USMLE, n.d.); may also be used by schools to assess learners’ achievement of certain curricular objectives</p> <p>Synonymous with/Includes: USMLE Step 2-CS, COMLEX Level 2-PE; MCC Part II; CEFM</p>

Exam - Licensure, Written/ Computerbased	<p>Standardized written examination administered to assess learners' factual knowledge retention; application of knowledge, concepts, and principles; problem-solving acumen; and clinical reasoning, for licensure to practice in a given jurisdiction (e.g., USMLE for the United States); typically paired with a clinical performance component (MCC, 2011a & 2011b; NBOME, 2010b; USMLE, n.d.); may also be used by schools or learners themselves to assess achievement of certain curricular objectives</p> <p>Synonymous with/Includes: USMLE Step 1; USMLE Step 2-CK; COMLEX Level 1; COMLEX Level 2-CE; COMLEX Level 3; MCC Part I; CEFM</p> <p>Note(s): United States Medical Licensing Examination (USMLE, n.d.): "The USMLE assesses a physician's ability to apply knowledge, concepts, and principles [emphasis added], and to demonstrate fundamental patient-centered skills, that are important in health and disease and that constitute the basis of safe and effective patient care."</p>
Exam - Nationally Normed/ Standardized, Subject	<p>Standardized written examination administered to assess learners' achievement of nationally established educational expectations for various levels of training and/or specialized subject area(s) (e.g., NBME Subject or "Shelf" Exam) (NBME, 2011; NBOME, 2010a)</p> <p>Synonymous with/Includes: NBME; NBME Subject Exam; NBME Shelf; COMAT Subject Exam; COMSAE; COMVEX</p>
Multisource Assessment	<p>A formal assessment of performance by supervisors, peers, patients, and coworkers (Bowen & Smith, 2010; Institute for International Medical Education, 2002) (Also see Peer Assessment)</p> <p>Synonymous with/Includes: Multi-Rater Assessment; 360-Degree Assessment</p>
Narrative Assessment	<p>An instructor's or observer's written subjective assessment of a learner's work or performance (Mennin, McConnell, & Anderson, 1997); May Include: Comments within larger assessment; Observation of learner or small group by instructor</p> <p>Synonymous with/Includes: Observation by Instructor; Observation by Faculty; Observation by Resident</p> <p>Does not include: Clinical Documentation Review; Clinical Performance Rating/Checklist; Peer Assessment; Self-Assessment</p>
Oral Patient Presentation	<p>The presentation of clinical case (patient) findings, history and physical, differential diagnosis, treatment plan, etc., by a learner to an instructor or small group, and subsequent discussion with the instructor and/or small group for the purposes of learner demonstrating skills in clinical reasoning, problem-solving, etc. (Wiener, 1974)</p>
Participation	<p>Sharing or taking part in an activity (ERIC, 1966b)</p> <p>Synonymous with/Includes: Attendance</p>
Peer Assessment	<p>The concurrent or retrospective review by learners of the quality and efficiency of practices or services ordered or performed by fellow learners (based on MeSH Scope Note for "Peer Review, Health Care," U.S. National Library of Medicine, 1992)</p> <p>Does not include: Multisource Assessment; Narrative Assessment</p>
Portfolio-Based Assessment	<p>Review of a learner's achievement of agreed-upon academic objectives or completion of a negotiated set of learning activities, based on a learner portfolio (Institute for International Medical Education, 2002) ("a systematic collection of a student's work samples, records of observation, test results, etc., over a period of time"— ERIC, 1994)</p>
Practical (Lab)	<p>Learner engagement in hands-on or simulated exercises in which they collect or use data to test and/or verify hypotheses or to address questions about principles and/or phenomena (LCME, 2011)</p> <p>Synonymous with/Includes: Laboratory Practicum; Anatomy Practical</p> <p>Note(s): LCME ED-12: "[P]ractical opportunities for the direct application of the scientific method, accurate observation of biomedical phenomena, and critical analysis of data...[C]ould include hands-on or simulated (e.g., computer-based) exercises in which medical students either collect or use data to test and/or verify hypotheses or to address questions about biomedical principles and/or phenomena" (LCME, 2011)</p>

Research or Project Assessment	<p>Assessment of activities and outcomes (e.g., posters, presentations, reports, etc.) of a project in which the learner participated or conducted research (Dyrbye, Davidson, & Cook, 2008)</p> <p><i>Synonymous with/Includes:</i> Multi-Media Production</p>
Self-Assessment	<p>The process of evaluating one's own deficiencies, achievements, behavior or professional performance and competencies (Institute for International Medical Education, 2002); Assessment completed by the learner to reflect and critically assess his/her own performance against a set of established criteria (Gordon, 1991) (NOTE: Does not refer to <i>NBME Self-Assessment</i>)</p> <p><i>Synonymous with/Includes:</i> Observation of self on video</p> <p><i>Does not include:</i> NBME Self-Assessment (National Board of Medical Examiners (NBME) Self-Assessment Services, n.d.)</p>
Stimulated Recall	<p>The use of various stimuli (e.g., written records, audio tapes, video tapes) to re-activate the experience of a learner during a learning activity or clinical encounter in order to reflect on task performance, reasoning, decision-making, interpersonal skills, personal thoughts and feelings, etc. (Barrows, 2000)</p> <p><i>Synonymous with/Includes:</i> Chart-stimulated recall (CSR)</p>

Resource Types

Resource	Definition / More information
Animation	<p>A series of visual representations imparting an impression of motion when shown in succession. Includes visual output from a simulation. (http://purl.org/dc/dcmitype/MovingImage)</p> <p><i>Does not include:</i> Film/Video</p>
Audience Response System	<p>An electronic communication system that allows groups of people to vote on a topic or answer a question. Each person has a remote control (“clicker”) with which selections can be made; Typically, the results are instantly made available to the participants via a graph displayed on the projector. (Group on Information Resources, 2011; Stoddard & Piquette, 2010)</p>
Audio	<p>Devices or applications used to acquire or transfer knowledge, attitudes, or skills through study, instruction, or experience using auditory delivery (see “Electronic Learning,” ERIC, 2008b)</p> <p><i>Synonymous with/Includes:</i> Podcasts</p> <p><i>Does not include:</i> Recordings of lectures, Mobile Application</p>
Cadaver	<p>A human body preserved post-mortem and “used...to study anatomy, identify disease sites, determine causes of death, and provide tissue to repair a defect in a living human being” (MedicineNet.com, 2004)</p> <p><i>Synonymous with/Includes:</i> Corpse; Dissection; Prosection; Prosection Specimen; Skeleton</p>
Clinical Case	<p>Clinical information provided for teaching and assessment. May provide a complete patient description (with findings) or represent a brief description of a presenting situation or finding. (CI Standardized Vocabulary Subcommittee)</p> <p><i>Does not include:</i> Standardized Patient, Virtual Patient, Clinical Case Module</p>
Distance Learning - Asynchronous	<p>Education facilitated through communications media (often electronic), with little or no classroom or other face-to-face contact between learners and teachers, and which “does not occur in real time or involve simultaneous interaction on the part of participants. It is intermittent and generally characterized by a significant time delay or interval between sending and receiving or responding to messages” (ERIC, 1983; 2008a)</p> <p><i>Synonymous with/Includes:</i> Computer-Assisted Learning (CAL); Computer-Assisted Instruction (CAI)</p>
Distance Learning - Synchronous	<p>Education facilitated through communications media (often electronic), with little or no classroom or other face-to-face contact between learners and teachers, “in real time, characterized by concurrent exchanges between participants. Interaction is simultaneous without a meaningful time delay between sending a message and receiving or responding to it. Occurs in electronic (e.g., interactive videoconferencing) and non-electronic environments (e.g., telephone conversations)” (ERIC, 1983; 2008c)</p> <p><i>Synonymous with/Includes:</i> Computer-Assisted Learning (CAL); Computer-Assisted Instruction (CAI)</p>
Educational Technology	<p>Mobile or desktop technology (hardware or software) used for instruction/learning through audiovisual (A/V), multimedia, web-based, or online modalities (Group on Information Resources, 2011); Sometimes includes dedicated space (see Virtual/Computerized Lab)</p> <p><i>Synonymous with/Includes:</i> Computer; Desktop Computer; Laptop; iPad; Netbook, Smartphone; E-reader; Web Portals; Collaboration Tools (Wikis, Blogs); Simulation Tools (see also, Mannequin, Searchable Electronic Database, Standardized/Simulated Patient, Task Trainer, Virtual Patient, Virtual/Computerized Lab); Audio/video Casting; e-Portfolios (see also, Portfolio-Based Assessment)</p>
Electronic Health/Medical Record (EHR/EMR)	<p>An individual patient's medical record in digital format...usually accessed on a computer, often over a network...[M]ay be made up of <i>electronic medical records</i> (EMRs) from many locations and/or sources. An Electronic Medical Record (EMR) may be an <i>inpatient</i> or <i>outpatient</i> medical record in digital format that may or may not be linked to or part of a larger EHR (Group on Information Resources, 2011)</p>
Film/Video	<p>A camera-based recording of visual and audible components. Audio might not be included. (http://purl.org/dc/dcmitype/MovingImage)</p> <p><i>Does not include:</i> Recordings of lectures or other Instructional/Educational activities—Use appropriate method from Instructional Methods list and Resource, e.g., Distance Learning or Educational Technology, Mobile Application</p>

Key Feature	<p>An element specific to a clinical case or problem that demands the use of particular clinical skills in order to achieve the problem's successful resolution; Typically presented as written exam questions, as in the Canadian Qualifying Examination in Medicine (Page & Bordage, 1995; Page, Bordage, & Allen, 1995)</p> <p>Synonymous with/Includes: Patient Management Problems (PMPs); Clinical Decision Making (CDM) exam</p> <p>Note(s): "1) a critical or essential step(s) in the resolution of a problem, 2) a step(s) in which examinees ...are most likely to make errors in the resolution of the problem, or 3) a difficult or challenging aspect in the identification and management of the problem in practice" (MCC, 2010, p. 6)</p>
Mannequin	<p>A life-size model of the human body that mimics various anatomical functions to teach skills and procedures in health education; may be low-fidelity (having limited or no electronic inputs) or high-fidelity (connected to a computer that allows the robot to respond dynamically to user input) (Group on Information Resources, 2011; Passiment, Sacks, & Huang, 2011)</p>
Medical Images	<p>Medical images of anatomic structures through the use of electromagnetic radiation or sound waves. Medical imaging techniques include radiographs, fluoroscopy, CT scans, PET scans, MRIs, and ultrasonograms. (adapted from http://medical-dictionary.thefreedictionary.com/radiology by Curriculum Inventory Standardized Vocabulary Subcommittee)</p> <p>Includes: Radiologic Imaging; See also sonogram.</p>
Mobile Application	<p>A mobile application, most commonly referred to as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer. Apps are generally small, individual software units with specific function. (Adapted from www.techopedia.com by Curriculum Inventory Standardized Vocabulary Subcommittee)</p> <p>Synonyms: app, Web app, online app, or smartphone app</p> <p>Does not include: Audio, Film/Video</p>
Patient-teaching	<p>An actual clinical patient with whom students interact to learn about a specific clinical condition, symptom, or finding, the patient's experience with illness, or interaction with the healthcare system.. (CI Standardized Vocabulary Subcommittee)</p> <p>Does not include: Simulated Patient, Standardized Patient, or Patient-receiving clinical care</p>
Patient – receiving clinical care	<p>An actual clinical patient with whom the student is involved for clinical documentation, care, and / or treatment. (CI Standardized Vocabulary Subcommittee)</p> <p>Does not include: Simulated Patient, Standardized Patient, or Patient-teaching</p>
Plastinated Specimens	<p>Organic material preserved by replacing water and fat in tissue with silicone, resulting in "anatomical specimens [that] are safer to use, more pleasant to use, and are much more durable and have a much longer shelf life" (University of Michigan Plastination Lab, n.d.); See also: Wet Lab</p> <p>Note(s): "Preserved tissue is first dissected and then dehydrated with acetone. It is immersed in a silicone bath under vacuum until the replacement of acetone is completed. After plastination, the resulting tissue is safe to handle (i.e., toxic fixatives are eliminated), the tissue has no odor and it is extremely durable. Thus, the anatomical specimens are safer to use, more pleasant to use, and are much more durable and have a much longer shelf life" (University of Michigan Plastination Lab, n.d.)</p>
Scenario	<p>A written outline of a postulated sequence or development of events in a real or simulated clinical setting for use in instructional and assessment simulations. (CI Standardized Vocabulary Subcommittee)</p>
Searchable Electronic Database	<p>A collection of information organized in such a way that a computer program can quickly select desired pieces of data (Webopedia, n.d.)</p> <p>Synonymous with/Includes: PubMed</p>
Standardized/ Simulated Patient (SP)	<p>Individual trained to portray a patient with a specific condition in a realistic, standardized and repeatable way (where portrayal/presentation varies based only on learner performance) (ASPE, 2011)</p> <p>Synonymous with/Includes: Gynecological Teaching Associates (GTA); Male Urogenital Teaching Associates (MUTA)</p> <p>Note(s): "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. SPs can also be used to give feedback and evaluate student performance." (ASPE, 2011)</p>

Task Trainer	<p>A physical model that simulates a subset of physiologic function to include normal and abnormal anatomy (Passiment, Sacks, & Huang, 2011); Such models which provide just the key elements of the task or skill being learned (CISL, 2011)</p> <p>Synonymous with/Includes: Plastic IV Arm, Airway Management Head, Urinary catheter trainer, Pelvic examination trainer; Virtual reality endoscopic devices</p> <p>Note(s): "Part-task Trainers in plastic or other forms cannot fully replicate performing the task on real patients, but they do allow learners to acquire the basic steps of the procedures and some of the basic skills needed to then be taught the fine art of doing the procedures under supervision on actual human beings" (CISL, 2011)</p>
Ultrasound	<p>Ultrasound is used by faculty and students for therapeutic purposes and /or to create images using high-frequency sound waves to identify and examine organs and structures such as the heart; blood vessels; kidneys; liver; and, during pregnancy, fetus(es) (adapted from http://www.nlm.nih.gov/research/umls/).</p>
Virtual Patient	<p>An interactive computer simulation of real-life clinical scenarios for the purpose of medical training, education, or assessment (Smothers, Azan, & Ellaway, 2010)</p> <p>Does not include: Educational Technology; Virtual/Computerized Lab</p>
Virtual Reality	<p>A virtual environment which allows the participant to experience a sense of presence in an immersive, computer-generated, three-dimensional, interactive environment [adapted from MeSH for "virtual reality exposure therapy"]</p>
Virtual/ Computerized Laboratory	<p>A practical learning environment in which technology- and computer-based simulations allow learners to engage in computer-assisted instruction while being able to ask and answer questions and also engage in discussion of content (Cooke, Irby, & O'Brien, 2010a); also, to learn through experience by performing medical tasks, especially high-risk ones, in a safe environment (Uniformed Services University, 2011)</p> <p>Synonymous with/Includes: Computer Assisted Instruction; Biochemistry; Microbiology; Molecular biology; Cell biology; Tissue culture laboratory; Pathology; Organic Chemistry; Physical Chemistry</p> <p>Does not include: Educational Technology</p>
Wet Laboratory	<p>Facilities outfitted with specialized equipment* and bench space or adjustable, flexible desktop space for working with solutions or biological materials ("C.1 Wet Laboratories," 2006; Stanford University School of Medicine, 2007; WBDG Staff, 2010) *Often includes sinks, chemical fume hoods, biosafety cabinets, and piped services such as deionized or RO water, lab cold and hot water, lab waste/vents, carbon dioxide, vacuum, compressed air, eyewash, safety showers, natural gas, telephone, LAN, and power ("C.1 Wet Laboratories," 2006)</p> <p>Synonymous with/Includes: Biochemistry; Cell Biology; Histology Slides; Microbiology; Molecular Biology; Tissue Culture Laboratory; Organic Chemistry; Pathology; Physical Chemistry; Preserved Specimens (not Cadavers, Prosected Specimens, or Plastinated Specimens)</p> <p>Note(s): Frequently used for instruction and/or research in Biochemistry; Molecular biology; Cell biology; Tissue culture laboratory; Pathology; Organic Chemistry; Physical Chemistry ("C.1 Wet Laboratories," 2006)</p> <p>"[T]raditional molecular and cell biology...must be facilitated by high-quality wet lab space with benches and standard, small scale, support space (including desks that are computer-friendly because even for molecular biology experimentation you need a computer). As long as people work with model organisms, cell culture, and molecular biology, this arrangement forms the basis of biomedical insights that are obtained by experimentation" (Stanford University School of Medicine, 2007 p. 58).</p>
Written or Visual Media (or Digital Equivalent)	<p>Reference materials produced or selected by faculty to augment course teaching and learning</p> <p>Synonymous with/Includes: Handouts; Fiction or non-fiction Books; Poetry; Professional Journal Articles; Textbooks; Syllabi</p>

Note: The concepts of **Flipped Classroom**, **Clinical Correlation**, **Clinical Case Modules**, **Case Inventories**, and similar terms that describe a particular use of multiple instructional methods or specific types of clinical documentation are not included in this list. It is the opinion of the MedBiquitous Curriculum Inventory Working Group Standardized Vocabulary Subcommittee that these terms are reflected by or are combinations of existing Instructional Methods or Resources.