Common Terms in Education (selected)

Brainstorming: An organized approach for producing ideas by letting the mind think without interruption. The term was coined by Alex Osborn. Brainstorming can be done either individually or in a group; in group brainstorming sessions, the participants are encouraged, and often expected, to share their ideas with one another as soon as they are generated. The key to brainstorming is not to interrupt the thought process. As ideas come to the mind, they are captured and stimulate the development of better ideas. Brainstorming is used for enhancing creativity in order to generate a broad selection of ideas in leading to a unique and improved concept.

Classroom management: A term used by many teachers to describe the process of ensuring lessons run smoothly without disruptive behavior by students. It is possibly the most difficult aspect of teaching for many teachers and indeed experiencing problems in this area causes many people to leave teaching altogether. It is closely linked to issues of motivation, discipline and respect.

Cognitive maps: (mental maps, mind maps, cognitive models, or mental models). A type of mental processing, or cognition, composed of a series of psychological transformations by which an individual can acquire, code, store, recall, and decode information about the relative locations and attributes of phenomena in their everyday or metaphorical spatial environment. Here, 'cognition' can be used to refer to the mental models, or belief systems, that people use to perceive, contextualize, simplify, and make sense of otherwise complex problems. As they have been studied in various fields of science, these mental models are often referred to, variously, as cognitive maps, scripts, schemata, and frames of reference.

Collaborative learning: An umbrella term for a variety of approaches in education that involve joint intellectual effort by students or students and teachers. Groups of students work together in searching for understanding, meaning or solutions or in creating a product. The approach is closely related to cooperative learning, but is considered to be more radical because of its reliance on youth voice. Collaborative learning activities can include collaborative writing, group projects, and other activities.

Community of practice: (often abbreviated as **CoP**) Refers to the process of social learning that occurs when people who have a common interest in some subject or problem collaborate over an extended period to share ideas, find solutions, and build innovations.

Computer Based Learning: (sometimes abbreviated **CBL**) Refers to the use of computers as a key component of the educational environment. While this can refer to the use of computers in a classroom, the term more broadly refers to a structured environment in which computers are used for teaching purposes. The concept is generally seen as being distinct from the use of computers in ways where learning is at least a peripheral element of the experience (e.g. computer games and web browsing).

Concept mapping: A technique for visualizing the relationships between different concepts. A **concept map** is a diagram showing the relationships between concepts. Concepts are connected with labelled arrows, in a downward-branching hierarchical structure. The relationship between concepts is articulated in linking phrases, e.g., "gives rise to", "results in", "is required by," or "contributes to".

Concept mapping serves several purposes. One, which takes place via knowledge elicitation, is to represent the mental models, i.e., the cognitive map of individuals, teams and organizations. Another, which takes place by knowledge capture, is to represent the structure of knowledge gleaned from written documents. The addition of knowledge resources, e.g., diagrams, reports, other concept maps, spreadsheets, etc., to the concept nodes (attached during or after construction) has been found to significantly improve the level of meaningful learning of the concept mapper. Educators are increasingly realizing the utility of such maps and have started using them in classroom.

Constructivism: A set of assumptions about the nature of human learning that guide constructivist learning theories and teaching methods. Constructivism values developmentally appropriate, teacher-supported learning that is initiated and directed by the student.

Cooperative education: A structured method of combining academic education with practical work experience. Research indicates that one of the attributes employers value most in newly hired employees is work experience. A cooperative education experience, commonly known as a "co-op", provides academic credit for career work. Cooperative education is taking on new importance in school-to-work transition, service learning, and experiential learning initiatives.

Cooperative learning: Proposed in response to traditional curriculum-driven education. In cooperative learning environments, students interact in purposely structured heterogeneous group to support the learning of one self and others in the same group.

Course: in the United States, a unit of instruction in one subject, lasting one academic term

Creativity: A human mental phenomenon based around the deployment of mental skills and/or conceptual tools, which, in turn, originate and develop innovation, inspiration, or insight.

Creativity techniques: Heuristic methods to facilitate creativity in a person or a group of people. Generally, most creativity techniques use associations between the goal (or the problem), the current state (which may be an imperfect solution to the problem), and some stimulus (possibly selected randomly). There is an analogy between many creativity techniques and methods of evolutionary computation.

Critical thinking: Consists of a mental process of analyzing or evaluating information, particularly statements or propositions that people have offered as true. It forms a process of reflecting upon the meaning of statements, examining the offered evidence and reasoning, and forming judgments about the facts. Critical thinkers can gather such information from observation, experience, reasoning, and/or communication. Critical thinking has its basis in intellectual values that go beyond subject-matter divisions and which include: clarity, accuracy, precision, evidence, thoroughness and fairness.

Cultural learning: The way a group of people within a society or culture tend to learn and pass on new information. Learning styles are greatly influenced by how a culture socializes with its children and young people.

Curriculum: (plural **curricula**) The set of courses and their contents offered by an institution such as a school or university. In some cases, a curriculum may be partially or entirely determined by an external body (such as the National Curriculum for England in English schools). In the U.S., the basic curriculum is

established by each state with the individual school districts adjusting it to their desires; in Australia each state's Education Department sets the various curricula.

Distance education: (or **distance learning**) A field of education that focuses on the pedagogy/andragogy, technology, and instructional systems design that is effectively incorporated in delivering education to students who are not physically "on site" to receive their education. Instead, teachers and students may communicate asynchronously (at times of their own choosing) by exchanging printed or electronic media, or through technology that allows them to communicate in real time (synchronously). Distance education courses that require a physical on-site presence for any reason including the taking of examinations is considered to be a hybrid or blended course or program.

Dyslexia: Said to be a neurological disorder with biochemical and genetic markers. Dyslexia was originally defined as a difficulty with reading and writing that could not be explained by general intelligence. One diagnostic approach is to compare their ability in areas such as reading and writing to that which would be predicted by his or her general level of intelligence, but some would say that it is not certain that intelligence should be a predictor of reading or writing ability; and also that the causes, effects and treatments of reading disabilities may be similar for all levels of intelligence.

Educational research: Research conducted to investigate behavioral patterns in pupils, students, teachers and other participants in schools and other educational institutions. Such research is often conducted by examining work products such as documents and standardized test results. The methods of educational research are derived chiefly from the social sciences, and in particular from psychology.

Empirical knowledge: (or **a posteriori knowledge**) Propositional knowledge obtained by experience or sensorial information. It is contrasted with a priori knowledge, or knowledge that is gained through the apprehension of innate ideas, "intuition," "pure reason," or other non-experiential sources. The natural and social sciences are usually considered a posteriori, literally "after the fact," disciplines. Mathematics and logic are usually considered a priori, "before the fact," disciplines.

Exchange student: A student (usually from high school or university) who temporarily goes abroad and lives with a host family in a foreign country, and attends school there. That host family often also sends a child of theirs abroad, usually to the same country as the student they are hosting. In this way, the two students are said to have been "exchanged," essentially temporarily trading countries with each other, although the period of exchange may not necessarily be simultaneous. The main purpose of exchange programs is to increase cultural understanding, both for the student and the people in the host country he/she comes into contact with. Exchanges are often arranged by organizations created for this purpose, called student exchange programs. Youth For Understanding and American Field Service are two examples of these organizations.

Experiential education: (or "learning by doing") The process of actively engaging students in an authentic experience that will have benefits and consequences. Students make discoveries and experiment with knowledge themselves instead of hearing or reading about the experiences of others. Students also reflect on their experiences, thus developing new skills, new attitudes, and new theories or ways of thinking. Experiential education is related to the constructivist learning theory.

Extra credit is an academic concept, particularly used in schools. Students are offered the opportunity to undertake optional work, additional to their compulsory school work, in order to gain additional credit that would boost their grades.[1]

Inquiry education: (sometimes known as the **inquiry method**) A student-centered method of education focused on asking questions. Students are encouraged to ask questions which are meaningful to them, and which do not necessarily have easy answers; teachers are encouraged to avoid speaking at all when this is possible, and in any case to avoid giving answers in favor of asking more questions.

Instructional design: (also known as **instructional systems design**) The analysis of learning needs and systematic development of instruction. Instructional designers often use instructional technology as a method for developing instruction. Instructional design models typically specify a method, that if followed will facilitate the transfer of knowledge, skills and attitude to the recipient or acquirer of the instruction.

Integrative learning: A learning theory describing a movement toward integrated lessons helping students make connections across curricula. This higher education concept is distinct from the elementary and high school "integrated curriculum" movement.

Kinesthetic learning: A teaching and learning style in which learning takes place by the student actually carrying out a physical activity, rather than listening to a lecture or merely watching a demonstration. Building dioramas, physical models or participating in role-playing or historical reenactment are some examples. Other examples include the kindergarten practice of having children perform various motions from left to right in preparation for reading education.

Learning by teaching (LdL): In professional education (in German "Lernen durch Lehren", therefore **LdL**) designates a method which allows pupils and students to prepare and teach lessons or parts of lessons. Learning by teaching should not be confused with presentations or lectures by students, as students do not only convey a certain content, but choose their own methodological and didactical approach in teaching their classmates a certain area of the respective subject.

Learning disability: In the United States, the term **learning disability** is used to refer to socio-biological conditions that affect a person's communicative capacities and potential to learn. The term includes conditions such as perceptual disability, brain injury, minimal brain dysfunction, autism, dyslexia, and developmental aphasia. In the United Kingdom, the term learning disability is used more generally to refer to developmental disability and intellectual disability.

Learning outcome: The term may refer to course aims (intended learning outcomes) or may be roughly synonymous with educational objectives (observed learning outcomes). Usage varies between organizations.

Lecture: An oral presentation intended to teach people about a particular subject, for example by a university or college teacher. Lectures are used to convey critical information, history, background, theories and equations. A politician's speech, a minister's sermon, or even a businessman's sales presentation may be similar in form to a lecture. Usually the lecturer will stand at the front of the room and recite information relevant to the lecture's content.

Lesson plan: A teacher's detailed description of the course of instruction for an individual lesson. While there is no one way to construct a correct lesson plan, most lesson plans contain similar elements.

Metacognition: Refers to thinking about cognition (memory, perception, calculation, association, etc.) itself. Metacognition can be divided into two types of knowledge: explicit, conscious, factual knowledge; and implicit, unconscious, procedural knowledge. The ability to think about thinking is unique to sapient species and indeed is one of the definitions of sapience. Metacognition is practiced to attempt to regulate one's own cognition, and maximize one's potential to think, learn and process stimuli from the surroundings.

Network of practice: Builds on the work on communities of practice by Jean Lave and Etienne Wenger in the early 1990s, John Seely Brown and Paul Duguid (2000) developed the concept of networks of practice (often abbreviated as NoPs). This concept refers to the overall set of various types of informal, emergent social networks that facilitate learning and knowledge sharing between individuals conducting practice-related tasks. In other words, networks of practice range from communities of practice to electronic networks of practice (often referred to as virtual or electronic communities).

Notetaking: The practice of writing pieces of information, often in an informal or unstructured manner. One major specific type of notetaking is the practice of writing in shorthand, which can allow large amounts of information to be put on paper very quickly. Notes are frequently written in notebooks, though any available piece of paper can suffice in many circumstances—some people are especially fond of Post-It notes, for instance. Notetaking is an important skill for students, especially at the college level. Many different forms are used to structure information and make it easier to find later. Computers, particularly tablet PCs and personal digital assistants (PDAs) are beginning to see wide use as notetaking devices.

Objective: An educational objective is a statement of a goal which successful participants are expected demonstrably to achieve before the course or unit completes.

Pedagogy: The art or science of teaching. The word comes from the ancient Greek paidagogos, the slave who took little boys to and from school as part of paideia. The word "paidia" (παιδιά) refers to children, which is why some like to make the distinction between pedagogy (teaching children) and andragogy (teaching adults). The Latin word for pedagogy, education, is much more widely used, and often the two are used interchangeably.

Post-secondary education: Any form of education that is taken after first attending a secondary school, such as a high school. The purpose of a post-secondary education can be to receive vocational education and training or to prepare for professions or scientific/academic careers through higher education.

Problem solving: Forms part of thinking. It occurs if an organism or an artificial intelligence system does not know how to proceed from a given state to a desired goal state. It is part of the larger problem process that includes problem finding and problem shaping.

Problem-based learning: (**PBL**) A didactic concept of "active learning" in tertiary education, but is currently being adapted for use in K–12 education. The defining characteristics of PBL are: learning is

driven by messy, open-ended problems; students work in small collaborative groups; and "teachers" are not required, the process uses "facilitators" of learning.

Accordingly, students are encouraged to take responsibility for their group and organize and direct the learning process with support from a tutor or instructor. Advocates of PBL claim it can be used to enhance content knowledge and foster the development of communication, problem-solving, and self-directed learning skill.

Programmed instruction: A field first studied extensively by the behaviorist B. F. Skinner. It consists of teaching through small lessons, where each lesson must be mastered in order to go on to the next. Students work through the programmed material by themselves at their own speed. After each step, they are presented with a question to test their comprehension, then are immediately shown the correct answer or given additional information.

Rote learning: A learning technique which avoids grasping the inner complexities and inferences of the subject that is being learned and instead focuses on memorizing the material so that it can be recalled by the learner exactly the way it was read or heard.

Rubric (academic): In education, a **rubric** is a set of criteria and standards linked to learning objectives that is used to assess a student's performance, such as on a paper, project, or essay.

Service learning: A method of teaching, learning and reflecting that combines academic classroom curriculum with meaningful youth service throughout the community. As a teaching methodology, it falls under the category of experiential education. More specifically, it integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, encourage lifelong civic engagement, and strengthen communities.

Situated learning: Education that takes place in a setting functionally identical to that where the learning will be applied.

Socratic method: (or **method of elenchos** or **Socratic debate**) A dialectic method of inquiry, largely applied to the examination of key moral concepts and first described by Plato in the Socratic Dialogues. For this, Socrates is customarily regarded as the father and fountainhead for ethics or moral philosophy. It is a form of philosophical enquiry. It involves two or more speakers, usually with one as the master (or wise one) and the others as students or fools. The method is credited to Socrates, who began to engage in such discussion with his fellow Athenians after a visit to the Oracle of Delphi.

STEM fields: The **Science, Technology, Engineering, and Mathematics (STEM) fields** are collectively considered core technological underpinnings of an advanced society. In many forums (including political/governmental and academic) the strength of the STEM workforce is viewed as an indicator of a nation's ability to sustain itself. Maintaining healthy levels of its citizenry well versed in the STEM fields is a key portion of the public education agenda of the United States of America at all levels, and substantial lobbying is underway in Washington, DC to raise awareness of STEM education issues.

Student-centered learning: An approach to education focusing on the needs of the students, rather than those of others involved in the educational process, such as teachers and administrators. This approach has many implications for the design of curriculum, course content, and interactivity of courses.

Student Learning Outcomes: The key concepts a student will learn as a result of successfully completing a course of study. Student learning outcomes are measurable results.

Syllabus: (plural **syllabi** or **syllabuses**) A document with an outline and summary of topics to be covered in a course. It is often either set out by an exam board, or prepared by the professor who teaches the course, and is usually given to each student during the first class session.

Theory of multiple intelligences: A psychological and educational theory formulated by Howard Gardner espousing that eight kinds of "intelligence" exist in humans, each relating to a different sphere of human life and activity.

Synthesis: (from the ancient Greek σύν (with) and θεσις (placing), is commonly understood to be an integration of two or more pre-existing elements which results in a new creation.

Taxonomy of Educational Objectives: An educational taxonomy that classifies educational objectives into three domains: cognitive, affective, and psychomotor. Most notable, Bloom's Taxonomy.

Virtual learning environment: (**VLE**) A software system designed to facilitate teachers in the management of educational courses for their students, especially by helping teachers and learners with course administration. The system can often track the learners' progress, which can be monitored by both teachers and learners. While often thought of as primarily tools for distance education, they are most often used to supplement the face-to-face classroom.

Visual learning: A proven teaching method in which graphic organizers, such as webs, concept maps idea maps, and slide shows are used to help students of all ages think and learn more effectively.

Vocational education: (or **Vocational Education and Training** (VET)) Prepares learners for careers or professions that are traditionally non-academic and directly related to a specific trade, occupation or vocation, hence the term, in which the learner participates. It is sometimes referred to as technical education, as the learner directly specializes in a particular narrow technique of using technology.

Workshop: A brief intensive course, a seminar or a series of meetings emphasizing interaction and exchange of information among a usually small number of participants.