GLOSSARY:

Of Terms Relating to

Educational Development

and Educational Technology

GLOSARIO:

De Términos Relacionados con

Desarrollo Educativo

y Tecnología Educativa

By/Por

© Professor Terence Karran

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Address for correspondence
Professor Terence Karran
Corporativo Universitario
Universidad Autónoma de Guadalajara
Av Patria 1501
C.P. 45129
Jalisco, México

Tel.: +52 33 36488824 ext. 35529
Fax: +52 33 36100410
Email: tkarran@uag.mx

Explanatory Note and Copyright Disclaimer

This Glossary was started while I was Director of the Centre for Access and Lifelong Learning at the University of Lincoln in the U.K. The Centre had two basic thematic areas of operation, Educational Development and Educational Technology. Educational Development included items such as accreditation, assessment, credit transfer, curricula design, ECTS, validation, etc. while Educational Technology included all aspects of technology enabled learning. Not surprisingly, however, there were areas of overlap and common ground between these two areas. For example, it is not possible to start to construct an on-line course until you have first defined the learning outcomes of the course, built the assessment strategy, etc., and these elements are part of curricula design, which is part of Educational Development. The Glossary was constructed at a time when some of the entries in it were in the process of the entering main stream higher education, and so there was often confusion about to what a term actually referred. For example APL (Accreditation of Prior Learning) includes both APCL (Accreditation of Prior Certificated Learning), and APEL (Accreditation of Prior Experiential Learning), although it is usually taken to refer to APEL alone. The Glossary was designed to assist staff to use the right terms when writing grant applications for educational multimedia.

The Glossary was prepared by myself, but helped by friends and colleagues, and grew organically, with new entries added as necessary. Consequently, in respect of IPR I have to issue a disclaimer. Many of these entries were provided by colleagues at other universities (some in other countries!) who have since moved on to other posts, elsewhere in the U.K. and beyond. Hence it would be very difficult, if not impossible, to track them down and ask for their permission to use entries that they may have written. Secondly, I have no way of knowing if contributions supplied by colleagues were written by them, or taken from some secondary source, either directly or in amended form. Consequently, as editor of the current version, I would make two requests of people using this document. First, that this document is used for personal use but not allowed into the public domain. Second, if users do find entries, which they know come from a secondary source, could they please advise me, so that I can seek permission to retain them in the document, or, if permission is not granted, remove them.

Nota explicatoria y renuncia de Copyright

Este Glosario se empezó cuando era yo Director del centro de Acceso y Aprendizaje durante toda la vida en la Universidad de Lincoln en el Reino Unido. El centro tenía dos áreas temáticas de operación básicas de las cuales yo era responsable, Desarrollo Educativo y Tecnología Educativa. Desarrollo Educativo incluía asuntos como acreditación, evaluación, transferencia de créditos, diseño de currículum, validación, etc.; mientras que Tecnología Educativa incluía todos los aspectos del aprendizaje habilitado con tecnología. Sin embargo, no es de sorprenderse, que había áreas que se traslapaban y cosas en común entre estas dos áreas. Por ejemplo, no es posible empezar a construir un curso en línea sin haber definido primero los resultados del aprendizaje del curso, haber construido la estrategia de evaluación, etc., y estos elementos son parte del diseño de la currícula, que es parte del Desarrollo Educativo. El Glosario fue elaborado en un momento en que algunas de las entradas estaban en proceso de entrar al uso diario en la educación superior, entonces a menudo existía confusión acerca de a qué se refería realmente cada término. Por ejemplo, APL (Acreditación de Aprendizaje Previo, por sus siglas en inglés) incluye tanto APCL (Acreditación de Aprendizaje Certificado Previo, por sus siglas en inglés), y APEL (Acreditación de Aprendizaje por Experiencia Previo), aunque generalmente se hace referencia solamente a APEL. El Glosario fue diseñado para ayudar al personal a utilizar los términos correctos al momento de escribir manuales de cursos, documentos de validación y también solicitudes de fondos en concursos para multimedia educativa.

El Glosario fue elaborado por mis colegas y yo, y creció orgánicamente, con nuevas entradas que se añadieron según se fue haciendo necesario. Por consecuencia con respecto a Derechos de Propiedad Intelectual (IPR, por sus siglas en inglés) tengo que renunciar dicho derecho. Muchas de estas entradas fueron proporcionadas por colegas que a partir de entonces se han cambiado de trabajo, a otras partes en el Reino Unido y otros lugares. Por lo tanto, sería muy difícil, si no imposible, encontrarlos y pedirles permiso para utilizar entradas que ellos pudiesen haber escrito. En segundo lugar, no tengo manera de saber si las contribuciones hechas por estos colegas fueron escritas por ellos, o tomadas de alguna fuente secundaria, ya sea de manera directa o de forma modificada. Por ello, como editor de la versión actual, me gustaría hacer dos solicitudes a las personas que utilicen este documento. Primera, que este documento se utilice para uso personal pero que no se haga del dominio público. Segunda, si los usuarios encuentran entradas, que saben que provienen de fuentes secundarias, podrían por favor avisarme, para pedir permiso de retenerlas en el documento, o si no se otorga el permiso, quitarlas del mismo.

Acceptable Use Policy: A statement of the procedures, rights and responsibilities of a user of a technology solution and any disciplinary procedures that will be enforced for misuse of the technology.

Access Centres: (See Learning Centres)

Accountability: (1) Holding operating personnel responsible for the estimated costs in their budgets and for expenditures.
(2) The assurance of an instructional or learning unit to its stakeholders that it provides education of good quality.

Accreditation: (1) The process of external quality review used in higher education to scrutinize colleges, universities, and higher education programs for quality assurance and quality improvement. Success results in an accredited institution and/or program. In some countries, it conveys institutional authority to offer specific programs. (U.S.A.)
(2) The award of a status which signals approval, recognition, and sometimes a license to operate and is based on pre-defined standards. It is a formal, yes/no (sometimes also conditional) decision based on explicit minimum (threshold) requirements.
(3) A term frequently used as a synonym for the recognition of learning as defined below. However, it is perhaps more properly used to signify the most formalised and widely practised forms of recognition.
(4) The process of assigning a value to elements of learning within a module or course. (Europe and U.K.)

Accreditation of Prior Certificated Learning (APCL): The process, through which previously certificated learning is considered and, as appropriate, recognised for academic purposes. This recognition may give the learning a credit-value in a credit-based structure and allow it to be counted towards the completion of a programme of study and the award(s) or qualifications associated with it.

Accreditation of Prior Experiential Learning (APEL): The process through which informal learning experiences occurring outside the formal education or training systems (broadly defined) are assessed and, as appropriate, assigned a value which can be recognised for academic purposes. Credit is given where there is evidence that the experience or informal learning has resulted in the learner achieving the appropriate and clearly expressed learning outcomes of a specific unit or module within a designated subject programme. This recognition may give the learning a credit-value in a credit-based structure and allow it to be counted towards the completion of a programme of study and the award(s) or qualifications associated with it. Normally the credit given is specific, rather than generic. (Europe and U.K.)

Accreditation of Prior Learning (APL): An umbrella term used to describe the process of assessing and, as appropriate, recognising all prior learning, both prior experiential learning or prior certificated learning for academic purposes. This recognition may give the learning a credit-value in a credit-based structure and allow it to be counted towards the completion of a programme of study and the award(s) or qualifications associated with it. The term 'accreditation of prior learning' is used to encapsulate the range of activity and approaches used formally to acknowledge and establish publicly that some reasonably substantial and significant element of learning has taken place. Such learning may have been recognised previously by an education provider; described as 'prior certificated learning' or it may have been achieved by reflecting upon experiences outside the formal education and training systems; described as 'prior experiential learning'. (Europe and U.K.)

Achieving Approach to Learning: Term used in educational literature, in which a learner is motivated towards achievement, competing for the highest grades and optimising organisation of time and effort. This approach can incorporate either “surface” or “deep” approaches to learning. (See also “Surface Approach to Learning” and “Deep Approach to Learning”)

Acknowledgement: Term sometimes used to describe the recognition of learning, but is usually used in a more broad and non-specific sense and does not necessarily involve the use of standardised mechanisms.

ACL: Acronym for Adult and Community Learning.

Action: A judgment by an accrediting organization regarding accreditation for new institutions and programs or review of accreditation for ongoing institutions and programs, this can include denial of accreditation, probation, and warning. (U.S.A.)

Action Learning: Learning that is derived from performing particular activities, and reflecting on, those activities. (See also Active Learning)

Action Verbs: Used in writing learning outcomes and objectives, verbs that state expectations of learner behaviour as an action to be performed, which learners and teachers can evaluate as having been performed.

Active Learning: Process whereby the learner interacts with the teacher, author, or the learning programme to construct his/her own meaning. It is also the learner's individual or meta-cognitive act of observation, hypothesis generation and testing, and reflection.

Activities Approach: A way of designing learning materials that provides a series of activities to help learners master content, on the assumption that learners will only learn if they actively engage with the material presented.

Adaptive: Description of technology and content that can adjust to match the individual person and situation.

Adaptive Learning: Learning where the content presented to the learner, and the order that content is presented, varies depending on the results of pre- and post-assessment of the learner's mastery of the content knowledge.

ADL: (See the Advanced Distributed Learning Initiative)

ADL/ADLNet: (See Advanced Distributed Learning Network)

Administration Tools: Generic term referring to all those set-up and maintenance tasks involved on the server side of the application and extending to set-up/configuration of client side software to work properly with the server side application. Some of these tasks may be carried out by instructors in some situations.

Administrative Software: Computer programs used to expedite the storage and use of data for efficient functioning in settings. Examples from an educational setting include student records systems, personnel records systems.

Administrator: Person who carries out administrative duties on behalf of a project or development team, for example in a learning materials production project, the administrator liaises with contract writers, assists with copyright clearance, compiles readings and illustrations, ensures production schedules are met, and controls the day-to-day progress of the project.

Adult Education: Teaching and learning that emphasises the principles of adult learning, often known as andragogy, as compared to pedagogy, or child-centred learning.

Advance Organisers: Statements at the beginning of a unit or lesson that are intended to remind learners of what they have already learned, to connect this previous knowledge with what they will learn in this lesson.

Advanced Distributed Learning Network (ADL/ADLNet): US Government/military sponsored initiative with participation open to all who can contribute. ADL documents, validates, promotes, and sometimes funds the creation of specifications and standards from other sources Its aim is to "accelerate large scale development of dynamic and cost-effective learning software and to stimulate an efficient market for these products in order to meet the education and training needs of the military and the nation's workforce of the future." Sponsors "collaboratories" for testing and implementation, and disseminates specifications with implementation guidelines. Formed as a developer and implementer of learning technologies, with the aim of establishing a distributed learning environment that permits the interoperability of learning tools and course content ADL initiated the Sharable Content Object Reference Model (SCORM),as a specification for Reusable Learning

Objects. Although developed within the US military community, SCORM is now being actively adopted by many training and education vendors. The ADL enjoys broad international support despite its origin as a US project funded primarily by the DOD. (See also Sharable Content Object Reference Model)

Advanced Learning Infrastructure Consortium (ALIC): A Japanese coalition of private and public organizations, academic, corporate, and individual members promoting the adoption of e-learning in Japan. ALIC primarily validates and documents specifications from other sources although it is producing some of its own. Part of its mission is promotional. (See at www.alic.gr.jp/eng/index.htm)

Adverse Action: Denial of eligibility or recognition of a higher education institution by an accrediting or quality assurance organization, or of an accrediting organization, as determined by the national, regional, or specialized accreditation body. (U.S.A.)

Affective Domain: In teaching and learning contexts, the domain field of activities relating to feelings or emotions.

AFLI: (See Advanced Distributed Learning Network)

Agency: Organization or office responsible for preparing, coordinating, and carrying out evaluation or accreditation procedures but not actually taking decisions on outcomes. The term, agency, is often used collectively although a committee may pass the final evaluation decisions. (U.S.A.)

AI: (See Artificial Intelligence)

AICC: (See Aviation Industry CBT Committee)

Aim: (1) In the educational context, a broad, general statement of either what the learner might learn or what the teacher will do.
(2) A general statement of the intention of the planner of learning activities or the writer of learning materials. (See also Objective)

ALIC: (See Advanced Learning Infrastructure Consortium)

Alliance of Remote Instructional and Distribution Networks for Europe (ARIADNE): A European Foundation with members from industry and academia that has created specifications and technology for online learning and which produces specifications and tools/services based on those specifications. (See at www.ariadne-eu.org)

American National Standards Institute (ANSI): ANSI is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. It produces accredited standards and accredits standards organizations. It is recognized by ISO as the U.S. national standards body. ANSI accredits numerous other standards bodies, including the IEEE. (See at www.ansi.org/)

American Standard Code for Information Interchange (ASCII): An eight-digit standardized binary code used by most teletypewriters and computer visual display units.

Analog: The representation of information by continuous wave forms, frequencies or bandwidth that vary in accordance with the source. Information represented and transmitted in the form of a continuous electromagnetic wave (contrast with digital)

Analysing and Tracking Tools: In the educational context, software used for the statistical analysis of student-related data and the facility to display the progress of individual learners in the course structure.

Analysis: In the educational context, a level of learning that involves breaking down material into its meaningful parts so that the relationship among the parts can be determined.

Analytic Marking: Analytic marking attempts to judge the component parts of a task separately, assigning marks to each, possibly weighting them and then calculating a final grade. Analytical marking and scoring of essays in mass testing situations has proved time-consuming and expensive, and inter-marker reliability has not been high. Holistic scoring is often preferred.

Analytical Approach: In the educational context, an approach to curriculum design, for example, which examines the components of that curriculum - such as the learning objectives, key concepts or the competencies that are desired as outcomes - and organises the curriculum around them.

Andragogy: (See Adult Education.)

Anonymous FTP: A form of FTP service that allows users to log on to a file server without providing a password to gain access. It is used to make collections of files (such as collections of shareware, music, video, etc) available to Internet users.

ANSI: (See American National Standards Institute)

APCL: (See Accreditation of Prior Certificated Learning)

APEL: (See Accreditation of Prior Experiential Learning)

API: (See Application Programming Interface)

APL: (See Accreditation of Prior Learning)

Applet: Literally meaning 'little application'; applets are small programs written in Java programming language that are downloaded from Web Servers and run inside a Web Browser. Applets are generally written to provide functions that cannot readily be provided using HTML.

Application: A level of learning that involves using knowledge in concrete situations.

Application Programming Interface (API): A software interface that a computer system, library, or application provides to allow requests for service or data exchange to be made of it by other computer programmes.

Application Sharing: The process of running an application on one machine and sharing the window view of the running application across the Web and there may also be provisions for sharing mouse control of the application.

Applications Software: Computer programs that are used to accomplish specific tasks not related to the computer itself. Examples are word processors, spreadsheets, and accounting systems.

Approaches To Learning: Refers to the range of processes of engaging in a learning task or activity, such as in a serial or linear versus a holistic manner.

Appropriate Learning Technologies: Technologies that have been selected in light of the nature of the subject matter and skill that is being taught, the learning context, the nature of the learners, and the relative costs of comparable technologies.

ARIADNE: (See Alliance of Remote Instructional and Distribution Networks for Europe)

Articulation Agreement: A document which enables the movement of a student from one type of educational institution to another.

Artificial Intelligence: (AI): Computer programs which attempt to emulate the decision-making capabilities and capacities of the human brain.

ASCII: (See American Standard Code for Information Interchange)

Assessment: (1) A diagnostic form of quality review and evaluation of teaching, learning, and programs based on a detailed examination of curricula, structure, and effectiveness of an higher education institution, its internal review, and quality control mechanisms.
(2) The measurement of the achievement of learning outcomes by learners (Europe and U.K.)
(3) The measurement of a learner's performance in terms of knowledge, skills and attitudes.
(4) A broad generic tool used to evaluate a learner's skill or knowledge level in a particular subject area that includes all types of activities that can be used to have learners demonstrate their ability to perform competences and demonstrate key skills. The total range of written, oral and practical tests/examinations, projects and portfolios, used to evaluate the learner's progress in the course unit or module, form an assessment. These measures may be used by the learners to evaluate their own progress (formative assessment) or by the institution to judge whether the learner has achieved the learning outcomes of the course unit or module (summative assessment).

Assessment Criteria: Descriptions of what the learner is expected to do, in order to demonstrate that one or more learning outcomes have been achieved.

Assessment Engines: A term used in E-Learning. Assessment and testing may be integrated with learning content and delivered with it, or it may be managed as a separate process. In either case, assessment and testing are vital components of any educational environment and the storage, assembly, delivery, and recording of assessments is often handled by an independent component called an assessment engine. Assessment engines provide specialized authoring tools designed specifically to create surveys, tests, and assessments. Most assessment engines also support the delivery of assessments to learners, and the reporting of results back to a learning management system. Some tools maintain their own database of results for reporting and analysis. Assessment engines typically include assessment authoring capabilities and can be used to create question banks from which assessments (and surveys) are assembled. The assembly process can include random selection of questions based on criteria and even the adaptive selection of questions based on previous results. The types of questions supported by assessment engines is impressively large, although straightforward multiple choice questions with a single correct answer still dominate. Assessment engines are included in many content authoring and assembly tools such as Trivantis, learning management systems such as LearnTone or Docent, and course management systems such as WebCT and Blackboard. There are also specialized assessment engines such as Question Mark or Quiz Studio that focus solely on the creation, delivery, and tracking of assessments. These specialized tools interoperate with a range of LMS, course management, and delivery environments.

Assessment Item: A question or measurable activity used to determine if the learner has mastered a learning objective or achieved a learning outcome. Same as an Assessment Task.

Assessment Pattern: The collection of assessment tasks, their weightings and the timing of completion used to assess the objectives of a unit, module or subject.

Assessment Tasks: These are activities that learners complete in order to demonstrate their knowledge and competencies.

Assessment Tools: These are instruments such as examinations, quizzes and IQ tests, which are designed to assess particular learner competencies.

Assignment: Assessment tasks that are normally submitted from work conducted during a semester or teaching session. Assignments can be formative or summative and of many forms (essays, short answer questions, computer programs, etc.) A piece of work completed by a learner and handed or sent to a tutor for comment and assessment (also called TAQ, Tutor-assessed question).

Asynchronous: Occurring at different times; in relation to communication, interaction in which the parties each participate at different times. In the context of e-learning, asynchronous refers to situations where all learner are not participating at the same time. For example, an instructor might upload a series of lessons to a web site and learners can log on and complete the lessons as their schedules permit.

Asynchronous Collaboration: Interaction with learners and instructors that is not in real time, such as e-mail conversations or posting comments to a discussion.

Asynchronous Communication: (1) A time-delayed communication through some type of recording device, which is replayed at the convenience of the user – the most common example is e-mail. Communication in which interaction between sender and receiver does not take place simultaneously (e.g. e-mail or fax).
(2) Communication that takes place without the communicating parties needing to be available at the same time (as with fax, post, voicemail or email). Communication where the message is stored until the receivers find it convenient to retrieve it
(3) All forms of verbal and non-verbal exchanges between and among participants in contiguous and non-contiguous settings, who are separated temporally from one another.

Asynchronous Conferencing: A form of computer conferencing in which participants do not interact at the same time. Contributions to the conference are generally posted to a conferencing system which arranges the contributions by topic or by time of receipt and makes them available to other participants.

Asynchronous Learning Delivery System: A learning delivery environment that can combine a number of asynchronous collaboration components.

Asynchronous Learning: A learning event where the interaction is delayed over time, such as a correspondence course. Also sometimes used to describe a learning event that is delivered after the original live event (usually as a recorded version of the event, with associated materials).

Asynchronous Sharing: The exchange of data and files where the correspondents are not on-line at the same time.

Asynchronous Training: Training where interaction between teachers and learners takes place intermittently, such as through links to HTML content, or e-mail, news or discussion groups.

Asynchronous Transfer Mode (ATM): A communication standard for broadband-ISDN transmission which is capable of supporting data rates of up to 600 Mbits/s.

ATM: (See Asynchronous Transfer Mode)

Audio Conference: A telephonic configuration by which telephones or speakerphones are connected so that people in three or more places can talk to one another.

Audiographic Conference: A technological and pedagogic arrangement in which audio conferencing is supplemented by devices that send text or still images, such as computers, electronic whiteboards, graphics tablets and light pens for writing to computer screens.

Audit: A process of review of an institution or program to determine if its curriculum, staff, and infrastructure meet its stated aims and objectives. An audit focuses on accountability of institutions and programs. In the U.K., in this context, the term "institutional review" is used instead of "audit".

Audit Report: The document prepared following a quality assessment peer review team site visit to a higher educational institution. The report generally focuses on institutional quality, academic standards, learning infrastructure, and staffing. In Europe, the document is more likely to be called an "evaluation report" or "assessment report." (Europe and U.K.)

Augmented Reality: An enhancement of the environment, that provides learning by overlays and additional inputs of information and knowledge.

Authentic Assessment: Assessment strategies which reflect as much as possible, real world performance conditions and which assess learners' performances under those conditions. Most frequently this is used to refer to assessment that closely reflects reality and situations that the learner is most likely to encounter in professional practice.

Authentic Learning Environments: Learning and teaching arrangements that reflect reality and situations that the learner is most likely to encounter in professional practice or work environments.

Authentic Learning Tasks: Educational activities designed to closely mirror activities that learners are likely to encounter in real-life.

Authentic Performance Assessment: The major goal of authentic performance assessment is to assess the ability of the learner to apply knowledge to solve real-life problems. These types of assessments, at least insofar as general descriptions are concerned, approach the learner as a more active participant in the assessment process. Hence the learner must take considerable control over the assessment through planning and applying knowledge in perhaps new and different ways. Proponents of these methods claim that they enable the learner to develop and demonstrate more complex cognitive skills.

Authoring Software: High-level computer programs designed for creating computer-based training, interactive presentations, and multimedia. Commands are often presented as simple terms, concepts, and icons. Authoring software translates these commands into programming code.

Authoring Systems: Software packages which facilitate the creation of CBT, online courses and learning modules, and multi-media programmes without the use of conventional computer languages. Authoring systems are designed to be used by non programmers or those with limited software experience. Authoring systems enable the presentation of the learning media on the screen and program all the sequences of events, links within the material and user interactions. Popular authoring systems include Tencore, Authorware, Hypercard, Toolbook and Icon Author.

Authoring Tools and Assembly Tools: Learning content authoring tools come in three varieties.
1. Software application specifically designed to create electronic learning content. These are generally either part of LCMS products or simple tools aimed at subject matter experts, such as Trivantis.
2. Tools used by content authors and instructional designers that can also create learning content. These include Macromedia products, which are starting to support the necessary learning content standards.
3. Tools that allow learning content to be created using standard word processing and presentation applications. A number of products are appearing that add macros to StarOffice, Word, or PowerPoint documents or put wrappers around these documents to make them conform to learning content standards. These tools allow documents and presentations to become learning objects that can be delivered by conforming delivery systems

Authorisation Tools: Computer software procedures which assign and enable access and other privileges to specific users or user groups.

Automated Feedback: Feedback that is provided to all learners, in some standard format. This kind of feedback is normally prepared in advance and stored such that the learner is able to receive it almost immediately. Although this can refer to manual processes, more usually it is machine enabled.

Aviation Industry CBT Committee (AICC): An industry consortium that has produced many important "guidelines and recommendations" (i.e., specifications) for computer-based training (See at: www.aicc.org/)

Bandwidth: The transmission capacity (range of frequencies, amount and rate of transmission) of telecommunications links (such as communications networks, telephone lines, satellite transmissions, computer-based systems computer bus or computer channel). More technically, the transmitted signal in different ranges of frequencies (highest to lowest), measured in cycles per second (Hertz) for analog signals and bits per second (Bauds) for digital signals, but generally used to refer to the volume of data that can be transferred in a given unit of time, in terms of bytes, kilobytes, or megabytes per second. For example voice communications require only a narrow bandwidth, and are therefore usually done via wires and cables. By contrast, the transfer of video imagery usually requires a lot of bandwidth which therefore determines the practicality of a computer receiving certain kinds of data (for example, video over the Internet)

Basic Education: the provision of teaching and learning opportunities that enable learners to obtain primary-level skills in reading, writing and numeracy, so that they can participate fully in society.

Baud: A unit used to measure the digital transmission speed of any device. One baud equals one bit per second (bps). It is used in describing the speed of binary telecommunications transmission.

Behavioural Objectives: Learning objectives that indicate the expected changes of behaviour in learners who complete a course of instruction.

Benchmark: A standard, a reference point, or a criterion against which the quality of something can be measured, judged, and evaluated, and against which outcomes of a specified activity can be measured. The term, benchmark, means a measure of best practice performance. The existence of a benchmark is one necessary step in the overall process of benchmarking.

Benchmark Information: Explicit national statements of academic standards or outcomes for individual subjects, normally used within tertiary education. Some countries develop benchmarks of this type in regard to a certain group of subjects as part of their quality assurance process. (Europe and U.K.)

Benchmarking: The on-going systematic process of setting levels against which quality can be measured and comparing the work processes and protocols of one organization with the those of another. The purposes of bench-marking are to provide a point of reference for evaluating the improvement in a process and to identify and learn from good practice in other organizations.

Best Practice: The adoption of work practices which, when effectively linked together, can be expected to lead to sustainable world-class outcomes in quality, customer satisfaction, flexibility, timeliness, innovation and cost-competitiveness.

Bimodal Institution: (See Dual-Mode Institution)

Binary (or Dual) System: A system of structuring and organising of tertiary education within a country through two separate and distinct types of institutions - universities and non-university institutions. For example Finland has a dual system with both universities and polytechnics offering higher education awards.

Binary Digit (Bit): The smallest unit of information a computer can use. A Binary Digit has only two values and is represented as a "0" or a "1" (also "on" or "off"). A group of 8 bits is called a byte. Bits are used to measure the speed of digital transmission systems. Speeds are commonly expressed in kilobytes (KBPS), megabytes (MBPS), and gigabytes (GPS) per second. In an electrical communication system, a bit is typically represented by the presence or absence of a pulse.

Bit: (See Binary Digit)

Blended Learning: A planned programme of study, which integrates e-learning with more traditional elements of presencial teaching and learning.

Bookmark: Noun used to refer to identify internet locations (e.g.htpp://www.google.com) and verb used to cover the creation, display, management and updating of bookmarks.

BPS: Acronym for Bits (Binary Digits) Per Second.

Branching: The process in computer-based learning materials where the next part of the programme that is accessed is dependent on the response, decision, or choice of the learner. In its simplest form the programme may branch to give an appropriate response to a simple 'yes' or 'no' decision from the learner.

Broadband: A term used to describe sufficient bandwidth to receive streaming video and sound and a range of frequencies wider than that required for just voice communications but also used as an adjective for the systems and equipment with wide bandwidth that can carry these ranges of frequency. Usually refers to bandwidth equal to or greater than DSL or Cable Modem speed. Generically used to refer to high-speed transmission across communications lines or services at T1 rates (1.544 MBPS) and above. (See also Narrowband and Wideband)

Broadcast: Any transmitted radio or television programme that is generally available.

Browser: Software that enables the location, viewing and retrieving of information from the World Wide Web using a graphical interface.

Browser Security: This refers to the measures put in place which maximise the security for users making transactions on the Web (e.g. when purchasing items).

BRR: (See Business Readiness Rating)

Building Knowledge: Facilities and structures created to accumulate and share the knowledge gained by individual instructors and learners through their experience in, and interaction with, distance education. Examples of knowledge building the range from simple Q&A or FAQ files to extensive databases tips, workarounds, and class exercises.

Building Motivation: Facilities for self-help and possibly other help (buddy system) to encourage and enhance morale among learners.

Bulletin Board System (BBS): A network-based system that enables users have access to the system to upload/post, store, exchange and retrieve/download messages, programs, data, audio and/or video files, etc. Also now refers to text based online communities and discussion groups which arise from the use of Bulletin Board Systems available over the World Wide Web, and which are usually set up to share information and data relating to a specific interest, topic or hobby. Such communities may allow general read and write public access, or require user IDs and passwords for access and require write access to be moderated.

Business Readiness Rating (BRR): A proposed standard model for rating open source software sponsored by Carnegie Mellon West Center for Open Source Investigation ,O'Reilly CodeZoo, SpikeSource and Intel.

Byte: A combination of eight bits.

Cables: Generically used to refer to the collections of wires twined together to connect peripherals to the computer system unit.

Cable Feed: Broadcast material which is sent via a fixed cable or a community antenna.

Cable Modem: A modem which connects to a city/regional/national cable service to provide a high speed connection from homes and businesses. However, usually these can only be used in districts that have been cabled for television.

CAD: Acronym for Computer-Aided design.

CAI: (See Computer Assisted Instruction)

CAL: (See Computer Assisted Learning)

CAM: Acronym for Computer-aided manufacturing.

Carrier: A signal with known characteristics-frequency, amplitude, and phase-that is altered or modulated in order to carry information. Changes in the carrier are interpreted as information.

Case Study Method: A method of teaching and learning in which learners are presented with real or fictional situations or problems to learners to analyze, to discuss, and to recommend actions to be taken. Frequently within this method learners first study the case, then identify the general principles which underlie the case. Then the learners are required to test these principles on other case examples for verification of the general validity of the identified principles.

Catalog Manager: Catalog management is the process of defining the learning that will be offered to different audiences, establishing learning plans (degree paths, certification paths, skill development curricula), scheduling the resources needed to support learning delivery, establishing the business processes for registering learners in offerings, and making the offering catalog accessible to the target audiences. This process can be very simple in an organization that is releasing a small number of self-paced learning products to its internal employees, or extremely complex, as in the case of a large educational organization that delivers thousands of instructor-led courses to a large and varied learner audience. Catalog manager components are typically interfaces that allow authorized individuals to make learning available and to set access rules, restrictions, prices, and so on.

CATS: (See Credit Accumulation and Transfer System)

CBA: (See Computer Based Assessment)

CBI: (See Computer Based Instruction)

CBL: (See Computer Based Learning)

CBT Tutorial Style: A method of presentation and interaction in CBT and multimedia learning which emulates the process of learning between a human tutor and learner. The process is assumed to comprise a number of defined steps which include**:**

1. Gaining the attention of the learner.
2. Setting out the objectives of the session;.
3. Presenting information.
4. Guiding the learner.
5. Checking for understanding.
6. Providing feedback on performance
7. Giving opportunities to retain understanding through practice.

CBT: (See Computer Based Training)

CD Based Delivery: The use of compact discs to store and deliver multimedia learning systems and materials which typically include images, video, text, sound and graphics. Most personal and lap top computers now have CD drives capable of displaying educational multi-media.

CD-I Compact Disc Interactive: A system developed by Philips to deliver multimedia to a largely domestic market through the home television set. The programme material is recorded on a CD and accessed interactively by the user through a CD-I player which connects to a conventional TV.

CDLSC: Acronym for Chinese Distant Learning Standards Committee

CDMA: Acronym for Code Division Multiple Access**.**

CD-ROM: (See Compact Disc-Read Only Memory)

CEN/ISSS WS-LT (See Comité Européen de Normalisation/ Information Society Standardization System Workshop— Learning Technology)

Central Processing Unit (CPU): The brain of the computer that processes instructions and manages the flow of information through a computer system.

Certification: (1) Program and process where a learner completes prescribed learning and passes an assessment or series of assessments. Results in a formal certification of a learner's knowledge or skill level.
(2) Within the h.e. context, written acknowledgement that quality standards established by a national or professional body required for approval of the delivery of a course have been achieved. (See also licensure)

CGI: Common Gateway Interface**.**

Chat: A term used to include facilities like Internet Relay Chat IRC and similar text exchanges. (See Synchronous Conferencing)

Checklist: In the educational context, a list of questions against which a learner can check his/her progress towards carrying out a particular activity.

CIF: (See Common Interchange Format)

CIT: (See ICT)

Client/Server Network: A configuration where all users store their files on a central computer or server, and files are accessed directly from where they are stored on the central computer. The central computer is the server, and the client refers to the computers that can access the information from the central computer.

CLEO: (See Customized Learning Experiences Online)

CMC: (See Computer Mediated Communication)

CMC Based Teaching System*:* A CMC system for teaching comprising learners, one or more teachers, course content, learning resources, teaching methods, teaching techniques, and teaching devices.

CML: (See Computer Managed Learning)

Coaching: A method of cognitive apprenticeship whereby the instructor observes learners as they try to complete tasks and provides hints, help and feedback when required.

Codec: Literally refers to Coder-Decoder which is an electronic device which converts analog video signals into a digital format for transmission, and vice versa. The name is abbreviated from "compressor-decompressor" when compression is also involved.

Cognition: This term refers to the capability of the learner to understand and derive meaning from any stimulus such as reading, viewing, observing, or doing something.

Cognitive Apprenticeship: A model of training and education that seeks to emulate the opportunities for extended practice on authentic tasks that apprentices had while working under a master craftsman. In this latter day equivalent, learning and understanding is derived from being immersed in relevant cognitive tasks during which teachers provide and support learners with scaffolds as the learners develop cognitive strategies. This method permits peers to learn through their interactions, to build stories about common experiences, and to share their knowledge-building experiences with the group.

Cognitive Domain: In the context of teaching and learning, the domain of learning activities that relate to perceiving the world and knowing about it or understanding it; the cognitive domain is considered to have six levels: knowledge, comprehension, application, analysis, synthesis and evaluation.

Cognitive Flexibility Theory: A theory of learning for advanced knowledge. Advanced knowledge is seen as less rule-based and rigid than introductory knowledge. The theory recommends approaching content from multiple perspectives through multiple analogies and the use of hypertext instruction. Largely drawn from the work of Richard Coulson Paul Feltovich, and Rand Spiro, cognitive flexibility theory is an attempt by these authors to reflect the interconnectedness of subject matter especially that in ill-structured domains, and its implications for learning and teaching.

Cognitive Learning Theories: Theories which focus on explaining the development of cognitive structures, processes, and representations that mediate between instruction and learning.

Cognitive Skills: Skills which require significant and explicit mental activity. These refer to mental capabilities and the ability to perform tasks that draw upon memory and thought.

Cognitive Skills Development: This refers to the enhancement of mental capabilities, memory, and the ability for rational thought.

Cognitive Strategies: An individual's skills for "learning how to learn.".

Cohort: Collective noun used to refer to group of learners that have a particular characteristic in common, for example the 18-23 age cohort refers to all learners in the group aged more than 17 and less than 24. Often used to refer to a group of learners who started a particular degree programme in the same year.

Collaboration: The act of working or doing something together, towards the accomplishment of common or divergent goals.

Collaborative Inquiry: This term refers to group-based efforts in the pursuit of new information or knowledge.

Collaborative Learning or Cooperative Learning: An approach to learning in which Learners of varying abilities and interests work together on group-based learning activities in order to accomplish common learning goals (e.g. to solve a particular problem, complete a project)

Collaborative Learning Tools: Learning aides, instruments, and strategies that are designed to optimise engagement in group-based learning activities.

Collaborative Tools: (See Asynchronous conferencing, Synchronous conferencing)

Collaborative Working: This term normally implies a group of people working at a distance, perhaps by the use CMC (e.g.e-mail, bbs or by using a specialised piece of software such as Microsoft Messenger or Lotus Notes)

COM: Common Object Model (Microsoft Software)

Comité Européen de Normalisation/ Information Society Standardization System Workshop— Learning Technology (CEN/ISSS WS-LT): CEN creates accredited standards for Europe, but its workshops (which are funded by the European Commission) function as open groups that invite expert participation and do not produce accredited standards but are centered around a series of deliverables. It has a remit to identify and define

learning technology standards requirements to support their wider eEurope strategy. It validates, modifies, and disseminates specifications for the European learning space. ISSS (Information Society Standardization System) provides industry with standardization services that promote a European information society. The Learning Technologies work programs include internationalization and translation of IEEE Learning Object Metadata, a report on the feasibility of educational copyright licenses, quality standards for learning technology, a repository of taxonomies, and a bulletin on standards activities. The WSLT is working on:
1. Internationalization of the Learning Object Metadata,
2. Standardized educational copyright,
3. Quality assurance process standards (similar to ISO 9000),
4. Educational modeling language (EML), and
5. A repository of taxonomies (standardized codes) for European learning.
(See At: www.cenorm.be/isss/Workshop)

Common Interchange Format (CIF): Manufacturing standard that ensures that screens of information can be displayed on any system which is CIF compliant. The CIF size is 352 x 288 pixels. The standard screen format for a Personal Computer is 800 x 600 pixels. In order to offer full-screen video-conferencing, many systems use 'pixel replication' to blow up CIF to full screen size. This is one of the reasons that some video-conference system images appear indistinct and “blocky”.

Communication: The act of passing information from one source to another.

Communities of Practice: Groups of people who are identifiable by a common interest, usually relating to a profession, or a specific occupational category.

Compact Disc-Read Only Memory(CD-ROM): A round, silver plastic disc that can store a large amount of text, audio, video and graphic information which can be read by a computer which has the necessary drive and software to display these materials.

Competences: (1) Competences represent a dynamic combination of knowledge, under-standing, skills and abilities. Fostering these competences is the object of educational programmes. Competences are formed in various course units and assessed at different stages. They may be divided in subject-area related competences (specific to a field of study) and to generic competences (common to any degree course). (Europe and U.K.)
(2) Used to refer to a group of related skills, knowledge and attitudes which underlies the performance of a complex and specifiable ‘real world’ activity in relation to a profession or occupational category (e.g. medicine). Many professions are involved in the development of ‘competency standards’ which specify the competencies seen as essential for adequate performance in all the major areas of activity undertaken by professional practitioners .

Competency Based Assessment: Assessments designed to assess the achievement of competencies by learners. Usually employed as part of a subject, unit or course designed to assist learners to achieve the competencies set down for their chosen profession. (Europe and U.K.)

Competency Standard: A statement of the competencies required for professional practice in a specific occupational area. Standards are usually developed by professional bodies, and are often approved and registered by national bodies. (Europe and U.K.)

Comprehension: A level of learning that involves grasping the meaning of material or restating previously learned material in one’s own words.

Compressed Video: Video images in a digital form that allow redundant information to be eliminated, thereby reducing the amount of bandwidth needed for their transmission. The amount of compression (i.e. bandwidth) will determine the picture quality.

Compression: A process that reduces the size of a file without altering the content of the file. File compression takes different forms depending on the content. Large files of any form can be compressed for sending over the Internet, usually using an application to compress them before sending (e.g. PKZip), and then requiring another application to expand the file when it has been received. Compression of multimedia files that are sent across a computer network is accomplished by removing all the redundant data from the video images or audio files for the purpose of easier storage and transmittal. This process may result in changes to the quality of the content once the file is decompressed that range from negligible to significant.

Computer Aided Assessment: Assessments carried out with the assistance of computers. Usually used to refer to systems in which assessment questions are posed, and responses taken and analysed by a computer.

Computer Assisted Instruction (CAI): Instruction mediated by computer in which the system allows for remediation based on answers but not for a change in the underlying program structure.

Computer Assisted Learning (CAL): A learning method that uses a computer system to present and facilitate individualised instructional material. Also referred to as 'computer-assisted instruction'.

Computer Based Instruction (CBI): Instructional method in which computer programs are used that teach or reinforce concepts and skills.

Computer Based Learning (CBL): A generic term for the various kinds of stand-alone (that is, non-networked) learning applications that involve computer software and enable learning activities that are managed via a computer.

Computer Based Training (CBT): System of instruction in which learning activities are accessed via a standalone computer, and thereby permit self-paced learning. CBT does not necessarily require that the course available through a network or via the Internet, as some computer-based training is available on CD-ROMs. CBTs can be considered a precursor of on-line learning.

Computer Conference: An electronic environment that is able to simultaneously host a number of large and small group activities and discussions.

Computer Conferencing: Interactive sessions between networked computers whereby data, documents, and/or video and audio are shared. The term encompasses: the use of a central computer to receive, hold and distribute messages among participants' computers and both data conferencing and desktop video conferencing. Web chat, whiteboards, and web-based conferencing may also be used in computer conferencing.

Computer Conferencing Systems: Computer-mediated group communication systems that archive messages and information so that they can be read and commented on by all members participating in a computer conference.

Computer Managed Learning (CML): A form of computer-assisted learning in which the computer is used to manage the pace and sequence in which a learner proceeds through a course. The concept of CML originated from early attempts at obtaining the educational benefits of using computers without incurring the high costs of multi-media development. CML systems delivered computer-scored tests and directed a student's learning, but the learning materials were delivered via other media, usually print.

Computer Marked Assignments: Assignments that are scored by computer using optical scanners.

Computer Mediated Communication (CMC): (1) Generic term covering to all forms of electronically supported communication between individuals or among groups that is facilitated by data exchange between computers. The use of computers to pass messages and information between remote users, synchronously and asynchronously, using a range of communication protocols such email, electronic messaging, bulletin boards. Transmission and reception of messages using computers as input, storage, output, and routing devices. CMC includes information retrieval, electronic mail, bulletin boards, and computer conferencing. CMC also

comprises synchronous and asynchronous communication
(2) In the context of teaching and learning, CMC refers to the use of electronic mail, computer conferencing and the World Wide Web to deliver learning material and provide learners and teachers with opportunities to create knowledge by teacher to learner and learner to learner interaction; learning via CMC is also called 'networked learning'.

Computer Mediated Learning: This term covers all learning activity that is delivered and supported via a computer.

Computer Network: A term used to describe two or more computers that are linked together and are capable of sharing information such as files, text, pictures, and video. Such networks may be within one classroom, across a university, or across the world, and may or may not be linked to the Internet. Computer networks are usually either star or peer to peer in configuration. A star network is structured around a central controlling computer that organizes and controls all information flowing through the network. By contrast a peer-to-peer network has no central controlling computer, but is capable of sharing files among the computers on the network.

Computer Supported Collaborative Learning: This term includes all collaborative learning activities that are supported and managed via computers.

Computer Type: The classification of a computer according to its storage capacity and computing capabilities, the number of users it can be support, the variety of its input and output options, and its physical size. Three major types of computers are mainframe computers, minicomputers, and microcomputers.

Computer-Based Training (CBT): Instruction primarily delivered by computer, with a more complicated branching program of remediation and answering.

Computer-Supported Collaborative Learning (CSCL): Area of work that focuses on socially oriented theories of learning using computer technologies to support collaborative methods of instruction.

Condition Statements: Parts of a learning objective or learning outcome that describe the conditions under which the performance required is to take place, such as 'without supervision' or 'using a calculator' (Europe and U.K.)

Condoning: Condoning is the term used when an examination board exempts a learner from reassessment in a failed module if the other related modules taken by the learner are passed with sufficiently high marks. (Europe and U.K.)

Consortium: An arrangement (usually contractual in nature) involving a number of organisations in formal partnership, with joint allocation of resources and sometimes an independent managing agent; for example, open and distance learning institutions that set up formal consortium agreements may involve co-production of elements of a course by the partners, complete joint course production, joint learner enrolments or cross accreditation and credit transfer.

Construct Validity: Refers to the degree to which the a test or assessment instrument measures the constructs on which it was based. Hence it would be possible to gauge the construct validity of a test of clinical competence by determining the extent to which scores on the test were seen to correspond to known, patently different, levels of clinical performance. For example, expert clinicians would be expected to have higher scores than recently appointed interns, who in turn should score higher than fourth year medical students.

Constructivism: A view of the process of learning that emphasises the value of each person 'constructing' their own knowledge. Hence the learner constructs knowledge and learning is a personal interpretation of experience. Hence learning is an active, often collaborative, process and is situated in real-world contexts, which means that the assessment of learning is integrated within the learning context itself. This can be contrasted with the idea of knowledge as something which can be 'transmitted' from one mind to another. More broadly, constructivism is also a perspective on the nature of what can be known (and not just how people might best be helped to learn)

Constructivist: An approach to the learning process in which learners and teachers work together to construct meanings, rather than having these meanings pre-determined or prescribed in advance for the learner by the teacher.

Constructivist Learning Activities: These are activities that situate learning in authentic learning tasks, and which enable learners to derive understanding by being immersed in these tasks.

Contact Hour: A period of 45-60 minutes of teaching contact between a staff member and a student or group of students is defined as a contact hour. Hence contact hours refer to face-to-face lectures or face-to-face tutorials or seminars.

Content: In the educational context, that which is being taught or learnt. More usually now refers to materials developed for open and distance learning, in which the main aim is to get the right content to right person, at the right time. This involves media choice (e.g., paper versus on-screen), speed, delivery cost, relevance, learner motivation, and other factors.

Content Assembly Tools: Content assembly refers to the linking of content objects together into cohesive learning modules, with navigation between objects clearly defined and with assessments associated to appropriate content. Content assembly is frequently performed using a different tool than the authoring tool used to create the learning objects, although many authoring tools include assembly capabilities. Content assembly tools may support the creation and application of content templates that act as the basis for packaging content consistently and efficiently into learning modules. Templates may be based on the structure, on presentation, on instructional design methods, or on all three. Thus a template might divide a lesson into an introduction, explanation, example, and assessment; have a background that can be branded with a school or company logo; and include slots for text, graphics, animations, and quizzes. It helps if these templates can be treated as learning objects themselves so they can be stored in a content repository for easy search and retrieval. Assembly also allows linking to other components of the learning experience such as chat rooms, asynchronous discussion forums, synchronous events, and collaboration environments.

Content Authoring Tools: Content (and assessment) authoring tools and services allow subject matter experts and instructional developers to create and modify learning content objects. Professional instructional developers typically require their tools to provide a rich set of functions, whereas subject matter experts are better served by tools that are easy to use and learn, and provide standard templates for the content being developed. Different authoring tools are used to create and format different types of content such as text, graphics, photos, animation, simulation, audio, and video. It is important for authoring tools to allow content authors to locate existing content to reuse or repurpose it rather than completely recreate it. This requires instructional designers, content providers, or course developers to accurately provide metadata descriptions of their content. In the ideal e-learning environment, authoring tools integrate smoothly with content repositories, allowing them to find, retrieve, modify, store, and replace objects and their metadata.

Content Item: A small piece of information that is stored in a database and is used to communicate skills or knowledge. It can be in any media format including text, graphics, animation, video, audio, and HTML plug-in.

Content Management System: An environment where learning developers can create, store, reuse, manage, and deliver digital content from a central object repository.

Content Validity: The extent to which the content of a test covers the area about which inferences are to be made. There is no commonly accepted measure for by this type of validity, which is determined by a thorough and expert inspection of the assessment material. Hence it is based on the professional judgement of the teachers. Sometimes this type of validity is referred to as instructional validity. There should be a match between the content as specified in the learning outcomes of the course, the instruction and the assessment material. There is an obligation on the teacher (test instructor) to be as clear as possible about what is being

measured and to produce an assessment instrument that measures performance as accurately as possible. (Europe and U.K.)

Contention: A method of network line control in which the computer terminals submit requests to transmit. If the channel in question is free, transmission goes ahead; if it is not free, the terminal has to wait until it becomes free. The computer may build up the queue of contention requests, and this can either be in a prearranged sequence or in the sequence in which the requests are made.

Continuing Education: Education which is provided for learners after they have gone through the "normal" educational process. Continuing education can be academic or vocational, credit or non-credit, and delivered on campus or at a distance.

Continuous Assessment: An assessment strategy in which different assessment tasks are put to the learner periodically throughout the teaching session of a particular unit or course. Scores obtained from continuous assessment tasks usually contribute to the final assessment grade.

Convergence: (1) The process whereby actors voluntarily agree to the adoption of suitable policies for the achievement of a common goal. Convergence in the architecture of national higher educational systems in Europe is pursued by the Bologna Process. (Europe and U.K.)
(2) The process in which technologies merge to create new technologies, and professional skills merge to create new professions. Within this context, the previously disparate and independent activities of learning, working, capturing knowledge, and the management of their sum total become one activity.
(3) The process whereby different devices used in information and communication technologies alter to become uniform multi-functional devices – for example mobile phones can deploy web browsers for internet surfing, while computers can use internet telephony (e.g. via Skype).

Co-production: In the educational context, the joint production of a course or courses by two or more institutions.

Copyright: A set of Intellectual Property Rights granted to an author under the national law on copyright.

CORBA: Acronym for Common Object Request Broker Architecture.

Correspondence Education: The earliest form of distance education, correspondence education relied on print-based, self-study materials with communication through physical postal services.

Cost: The amount of actual or notional expenditure of money incurred on, or attributed to, a specific object or activity.

Cost Benefit Analysis (CBA): A method of systematically comparing the cost of carrying out an activity, with the value of the resulting service, resource, information or product from that activity to any of a possible range of beneficiaries.

Cost Centres: The locations, functions, items of equipment or departments to which costs are attributed; for example, a particular degree programme may be identified as a cost centre within an university.

Cost Unit: A measured amount of a product or service used for the expression of the costs of that product or service.

Counselling: In the educational context, the provision of personal and emotional support to learners.

Course: Term used to refer to a self-contained part of a program of studies, or the program of studies in its entirety. A planned learning experience which may be tightly structured (e.g., the Open University undergraduate programme) or loose (e.g., a study circle); it may be long or short in duration; it may be credit or none credit bearing, it may or may not lead to a qualification; it may be offered by an educational, industrial or other provider; it may be formal or informal. (Europe and U.K.)

Course Blueprint: A course planning document, containing details of the content, components and costing of a course that is proposed for development.

Course Customising: The process of changing the structure of the course and its assignments, exams, etc. This may include guides, templates, and related product support and training.

Course Management System: This category of system is particularly prevalent in the education market where the focus of e-learning is on blending a range of different learning delivery methods in an instructor-led environment. Course Management Systems differ from LCMS and LMS products in that they are intended for the template-driven assembly of entire courses and they integrate (although not always seamlessly) with student information or registrar systems. Course management systems, such as those from eCollege, and WebCT, provide the following functionality:
1. Assembly of course components into a curriculum with sequencing/navigation support;
2. Delivery of course content to the learner;
3. Electronic assignment management, submission, tracking, grading, and feedback;
4. Creation and delivery of assessments, surveys, and tests;
5. Integration of asynchronous tools such as discussion threads, moderated discussion, email group management, and document exchange;
6. Integration of synchronous tools such as chat, whiteboard, screen sharing, audio conferencing, and video conferencing;
7. Support for instructor management of courses including capabilities such as: dynamic revision of materials, assignment management, grade book, control over who can access the course, etc. and;
8. Automated tools to support integration with student administration systems for class scheduling, class enrolment, synchronizing student information, and results tracking.

Course Management Tools: The facilities whereby instructors can collect information from or about learners related to their progress in a course (or its units) and permit/deny access to course resources.

Course Monitoring: The process of collecting, storing and providing information about the usage of course resources by individual learners and groups of learners.

Course Planning Tools: Facilities that enable the mapping of a course layout, with its individual units, and their learning materials, delivery modes and assessment requirements and the timing for the delivery of the different elements of the course.

Course Tools: Protocols which facilitate the instructor's tasks in relation to bringing course materials together and managing the learner's use/access of those materials.

Course Transfer: (1) The sale, lease or gift to one institution of a course produced by another institution.
(2) The process whereby a student is able to move from one course to another (possibly at another institution)

Course Unit: In the context of higher education this refers to a self-contained, formally structured learning experience. It should have a coherent and explicit set of learning outcomes, expressed in terms of competences to be obtained, and appropriate assessment criteria. Course units can vary in the number of credits attached to them. (Europe and U.K.)

Course Writer: Someone who possesses both expertise in the subject matter of the course and the ability to write in a way that communicates effectively with learners at a distance.

Courseware Design and Development: This process of the planning and production of all educational resources that are directed at or associated with learning and teaching in a subject or course.

Courseware: (1) Any type of instructional or educational software programs.
(2) Generic term that refers to all “wares”, i.e., educational resources that are directed at, or associated with, learning and teaching in a subject or course

(3) This term refers to instructional materials in a complete mediated format designed to facilitate learning of behaviours, understanding, attitudes and/or propensities and is frequently used to describe learning materials delivered by computer-based methods. This term usually refers to materials that cover a topic, module or unit but may refer to a single instructional component, such as a computer-assisted instruction program, or a multiple instructional entity, such as guidebooks, videodiscs, ad computer-assisted instruction.

Coursework: The required tasks within a course unit or module.

CPD: Acronym for Continuing Professional Development.

CPU: (See Central Processing Unit)

Crash Recovery Tools: Computer programs that enable recovery from communications or server hardware failures without loss of data.

Credit: (1) Verb meaning the process of quantifying and expressing the volume of learning based on the achievement of learning outcomes and their associated workloads measured in time. A quantified means of expressing equivalence of learning.
(2) Noun referring to a measure of outcome awarded to a learner in recognition of the verified achievement of designated learning outcomes at a specified level. (Europe and U.K.)

Credit Accumulation: The process of accruing credits over time in relation to a planned programme of study. In a credit accumulation system a specified number of credits must be obtained in order to complete successfully a semester, academic year or a full study programme, according to the requirements of the programme. Credits are awarded and accumulated only when the successful achievement of the required learning outcomes is confirmed by assessment (Europe and U.K.)

Credit Accumulation and Transfer System (CATS): A system which enables learners to accumulate credit for certificated and non-certificated learning, and which facilitates the transfer of that credit within and beyond the providing institution. (U.K.)

Credit Framework: The overall framework within which credit accumulation and transfer systems operate. The credit framework encompasses core definitions and principles, and defines the basis for the award of credit, the levels, the number of levels and the level descriptors. A system that facilitates the measurement and comparison of learning outcomes achieved in the context of different qualifications, programmes of study and learning environments on the basis of student workload measured in time. (U.K.)

Credit Level: Credit level specifies the education level at which credits sought by a student via APL or given to a student for successfully completing a course of study is set. In the U.K. there are now nationally agreed credit levels covering educational provision from first degree to Ph.D. level. (See also Learning Level)

Credit Points: The unit of CATS currency used to assign value to elements of learning.

Credit Rating: The number of credit points assigned to an element of learning.

Credit Tariff: The number of credit points required to gain an award.

Credit Type: Credit type provides an indicator of the status of a course unit or modules in the study programme. It can for example be described as Core (major course unit), Related (unit providing instrument/support) or Minor (optional course unit)

Criteria: Standards for accreditation or certification of an institution or program. These involve expectations about quality, effectiveness, financial viability, compliance with national (U.S. state and federal) rules and regulations, outcomes, and sustainability. In the U.K., “criteria” refers to standards for degree-awarding powers and the title “university”.

Criterion Referenced Assessment: The evaluation of a learner's performance in an assessment task in relation to a given professional or academic standard rather than in relation to the performance of other learners in a particular reference group. Hence student assessment is conducted with reference to specified criteria for adequate or satisfactory performance. Criterion referenced assessment is usually contrasted with 'norm referenced' assessment, a mode of assessment which refers to the relative performance of other students in the same assessment in order to set the standards used in the assessment.

Criterion Referenced Tests: Tests used to define a learner's performance in terms of specific competencies or objectives mastered.

Criterion Referencing: Criterion-referencing, as the name implies, involves determining a student's grade by comparing his or her performance with clearly stated criteria for the assessment of learning outcomes and clearly stated standards for particular levels of performance. Theoretically, using criterion referencing, all students within a particular cohort could receive very high (or very low) grades depending solely on the levels of individuals' performances against the established criteria and standards. The goal of criterion-referencing is to report student achievement against objective reference points that are independent of the cohort student being assessed. Criterion-referencing can lead to simple pass-fail grading schema, such as in determining fitness-to-practice in professional fields. Criterion-referencing can also lead to reporting student achievement or progress on a series of key criteria rather than as a single grade or percentage. Unlike norm-referencing, there is no pre-determined grade distribution to be generated and a student's grades is in no way influenced by the performance of others

Criterion Related Validity: There are two main types of criterion related validity**:** predictive and concurrent validity. In predictive validity the concern is with the usefulness of the test scores in predicting some future performance. For example, How valid are the SAT Scores in predicting university success? In concurrent validity the concern is whether the test results can be substituted for some less efficient way of measuring performance. For example, is it valid to substitute assignments for invigilated examinations? Typically criterion related validity is expressed in terms of a correlation coefficient, which measures the degree of association between the test (predictor) and criterion related score.

CSCl: (See Computer Supported Collaborative Learning)

Curriculum (plural curricula): (1) A plan of instruction that details what students are to know, how they are to learn it, what the teacher's role is, and the context in which learning and teaching will take place.
(2) the total structure of knowledge and skills and educational experiences that make up any one educational system or its component parts.

Curriculum Frameworks: Descriptions of what should be taught in order for students to acquire certain skills.

Curriculum Management: Tools used to manage multiple programs, skills/competencies management, and certification.

Curriculum Planning: Generic term used to describe any systematic process that develops the structure of a curriculum.

Customized Learning Experiences Online (CLEO): CLEO operates under the IEEE Industry Standards and Technology Organization. CLEO participants are IBM Mindspan Solutions, Cisco Systems, Microsoft Corporation, click2learn, and NetG with academic support from the UK Open University, and the Carnegie Mellon Learning Systems Architecture Lab. CLEO gathers requirements and makes suggestions for early specifications. CLEO's goals are to conduct focused, applied research on technical and pedagogical issues related to the ADL Sharable Content Reference Model (SCORM) (See at www.cleolab.org)

CwR: Acronym for Computers within Reach.

Cybernetic Learning Environment: Environments in which there is mutual interaction between the learning system and the learner interaction, enabling the learner to control the learning experience with the system, while the system can respond intelligently to the explicit and implicit needs of the learner by adjusting to a changing multidimensional portrait.

Cycle: A cycle is a course of study leading to an academic degree. One of the objectives indicated in the Bologna Declaration is the adoption of a higher education system across Europe based on three main cycles, undergraduate (3 years), Masters (2 Years) and PhD (3 Years). (Europe and U.K.)

Cycle Descriptor: Generic statements of the expected outcomes of a period of study that equals one of the three cycles as identified in the Bologna Process. Such a descriptor provides clear points of reference that describe the outcome of a degree programme. (Europe and U.K.)

Data: Raw and unclassified information.

Data Base: A file containing data which is organised in a pre-defined structure; typically created and analysed by data base software.

Data Base Software: Computer programs that allow the storage of large amounts of data and possess the capacity to search, retrieve, sort, revise, analyze and order data quickly and efficiently. There are two types of databases, flat file data-bases and relational databases. Includes programmes such as Microsoft Access.

Data Conferencing: Systems that support point-point and multi-point conferencing. Data-conferencing features offered by the various systems available can include whiteboards, file transfer and application sharing.

Data Mining: Machine search of existing data and data sources in order to extract and classify potentially valuable information.

Data Review Monitor: A small monitor which allows the lecturer to see the information that is being displayed to students without the need to turn around to view the main display system.

Data Tools: includes tools for marking on-line, managing records, and for analysing and tracking.

DCMI: (See Dublin Core Metadata Initiative)

DCOM: Distributed Common Object Model (Microsoft).

Declarative Knowledge: Knowledge whose demonstration requires that a learner recalls in verbatim, paraphrased, or summarized form facts, lists, names, or organized information. Also described as "knowing that".

Dedicated Lines: Telecommunication lines leased for a specific term between specific points on a network usually to provide certain special services not otherwise available on the regular or public-switched network.

Deep Approach to Learning: A situation in which a learner student is motivated intrinsically to develop his or her understanding and to challenge ideas about a topic. To maximise understanding, the student reads widely, discusses issues and reflects on what has been heard and read, integrating details into broad, over-arching (or high-level) ideas which she or he is constantly trying to develop. Learning is seen as involving meaning, understanding, and a way of interpreting the world. Hence, it is the learner who constructs knowledge, not the teacher who imparts it. (See also "Surface approach to learning" and "Achieving approach to learning")

Degree Audit: In higher education, a formal evaluation of a degree candidates learning progress against the standards set for awarding a specified degree.

Degree/Diploma: Degree describes the qualification awarded by a higher education institution after successful completion of a prescribed study programme. In a credit accumulation system the programme is completed through the accumulation of a specified number of credits awarded for the achievement of a specific set of learning outcomes. (Europe and U.K.)

DEL: Acronym for Distributed and Electronic Learning.

Delivery Environment: E-learning term - the delivery environment provides the learner with access to learning content and other components of a learning environment such as chat, email, quizzes, multimedia players, collaboration tools, application sharing, shared whiteboards, equation editors, etc. The environment also provides tools for instructors, if there is an instructor-led component of the learning. The delivery environment also provides navigation through the content, sometimes under learner control, sometimes under instructor control, and sometimes under control of the delivery system itself. Rules and/or behaviors for navigation through an offering are established during content assembly. Components of a delivery environment may include:

1. Synchronous collaboration environments such as chat rooms, whiteboards, screen sharing, and audio or video conferencing;
2. Asynchronous collaboration such as email discussion forums;
3. Self-paced content (text, video, simulations, graphics, etc);
4. Delivery and tracking of pre- and post-assessments, and;
5. Adaptive navigation, depending on the results of assessments.
Data on a learner's activities and status in an offering may be passed back to the learner profile.

Delivery Management System: A range of technologies that support the delivery of learning content to a learner in self-paced, collaborative, real time, and asynchronous modes.

Desktop Publishing (DTP): The production of printed text using a 'desktop' or personal computer system.

Desktop Videoconferencing: Videoconferencing on a personal computer equipped with a microphone, and a video camera. operating through a fast Internet connection (at least 28. 8 Kbps modem). There can be two-way or multi-way video and audio depending upon the hardware and software of participants.

Developmental Testing: The process off trying out learning materials with students in order to develop and improve these materials for the benefit of future learners.

DHCP: Dynamic Host Configuration Protocol.

Diagnostic Testing: In the educational context, the process of testing to discover gaps in learning, the nature of student mis-conceptions or other impediments to learning, for the benefit of teachers and/or students.

Digital: System of encoding data by the use of discrete units (on/off) rather than continuous as in analog signals. All information stored digitally is encoded as bits of 1's and 0's that represent on and off states. Digital information may include video, audio, graphics and text. Once data is digitized, it can be stored and changed. Information stored in the form of bits (on/off signals) and which can be stored and transmitted via electronic media.

Digital Delivery: Delivery of courses via the World Wide Web, interactive multimedia, and any other medium in which information is carried in digital forms.

Digital Subscriber Line (DSL): A technology that dramatically increases the digital capacity of ordinary telephone lines (the local loops) into the home or office.

Diploma Supplement: The Diploma Supplement is a document supplied in addition to the official institutional national degree/qualification and is designed to provide a generic and universally explicable description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the holder of the degree/qualification. It is based on the model developed by the European Commission, Council of Europe and UNESCO/CEPES. It improves international transparency and the academic/professional recognition of qualifications. (Europe and U.K.)

Directed Instruction: A teaching and learning model based on behavioural and cognitive theories; in which students receive information from teachers and do teacher-directed activities.

Discovery Sequence: Planned process through which learners take on more of the processing responsibilities, engaging cognitive strategies as wall as domain knowledge.

Disk: A round plastic device covered by a thin laminate of metal on which computer programs and data can be saved. There are three main types of disks**:** hard disks (maintained inside the computer), diskettes (a. k. a. floppy disks), and compact disks.

Disk Drive: A device that reads the information contained on a disk. The drive may be permanently installed inside the computer (hard disk drive) or contain a slot for entering the disk from outside the computer (floppy disk drive or compact disk drive)

Distance Education: A mode of study in which students rarely, if ever, participate in face-to-face interaction with other students and teachers. In distance education, instruction and support are provided via learning packages or synchronous forms of delivery. In its earliest form, distance education was undertaken via the postal service, today it is usually mediated by technology. It is different from distance learning, in the latter has a student centred approach, while the former need not.

Distance Learning: (1) Umbrella term used to describe types of organized learning activities in which learners are separated in geographical distance and/or and time (or both) from their educational provider. Conversely. any learning event where the learner is not required to travel to a specific location. Consequently, the learner has responsibility for his/her own learning and, instead of relying on the presential delivery of content via a face to face individually crafted lectures, heavy reliance is put on utilising high quality learning materials, specifically designed in a variety of media and formats for learning at a distance and produced by a course team with a specialised division of labour.
(2) Using some electronic means (e.g. modems, satellite transmissions) to make possible teaching and learning at separate sites. (See also Distance Education, Open Learning)

Distance Teaching: A term that emphasises the teacher's role in the distance education system.

Distributed Learning: (1) A system and process that uses a variety of technologies, learning methodologies, online collaboration, and instructor facilitation to achieve applied learning results not possible from traditional education in a truly flexible, anytime/anywhere fashion.
(2) A term referring to all organized learning activities under the influence of an educational organization that are carried out by learners, who may be separated in time and space from their educational organization, in number of educational locations.
(3) A term that emphasises learning rather than the technology used or the separation between teacher and learner; distributed learning makes learning possible beyond the classroom and, when combined with classroom modes, becomes flexible learning. (See also Distance Education, Distributed Learning and Open Learning)

Distributed Problem Based Learning: This refers to problem-based learning activities carried out by learners in educational settings where they are separated in time and space from their educational organization.

DNS: Acronym for Domain Name Server.

Doctorate/Doctoral Degree: A high level qualification which is internationally recognised as qualifying someone for research or academic work, may be designated as a doctorate or doctoral degree. It will include a substantial amount of original research work which is presented in a thesis. It generally refers to the degree awarded after completion of third cycle studies. (Europe and U.K.)

Downlink: A television dish used to capture signals off a satellite transponder for distribution in a local area.

Download: The process of transferring (copying) data files from a main host computer to a smaller computer more usually via the WWW, using FTP. It is the opposite to upload.

Drill and Practice: An instructional software program that presents items for students to work (usually one at a time) and gives feedback on correctness; designed to help users remember isolated facts or concepts and recall them quickly.

DSL: (See Digital Subscriber Line)

DTP: (See Desktop Publishing)

Dual Mode Institution: Also called bimodal or mixed mode, this term refers to an institution that offers learning opportunities in two modes: first, using traditional classroom-based face to face methods for students on campus: second, using distance methods for student off campus. The same courses may be offered in both

modes, with common examinations, but the two types of learner (on-campus and external) are regarded as distinct.

Dublin Core Metadata Initiative (DCMI): An open forum engaged in the development of interoperable online metadata standards that support a broad range of purposes and business models. DCMI produces and disseminates specifications and is developing a metadata standard for the common description of online information resources. (See at www.dublincore.org)

DVD ROM: Disc which uses the same optical technology as a CD ROM but which can record at a much higher density owing to use of a higher frequency laser and a dual-layer, double-sided platter. Like CD ROMS, DVD ROMS are available in both read-only and write-once versions.

Dynamic Content: Real-time, current, up-to-the second information, delivered in response to immediate needs, and personalised to the individual.

ECTS: (See European Credit Transfer and Accumulation System)

EDGE: Acronym for Enhanced Data rates for GSM Evolution.

Editor: In the context of open and distance learning, the person on the Course Development Team who bears responsibility for the clarity and accuracy of the language and the textual presentation of the materials, much as in a traditional publishing house.

EdNA: (See Education Network Australia)

Education Network Australia (EdNA): Australian initiative funded and jointly managed by all Australian ministries of education involving all Australian education and training authorities focused on maximizing the benefits of the Internet to their stakeholders. EdNA Online acts as the Australian 'gateway' or 'portal' to information and curriculum resources and services for education and training. EdNA participates in the creation of an extensive set of technical specifications and standards which it validates, documents, and disseminates as a free service to Australian educators. (See at www.edna.edu.au)

Education: Method of learning which emphasizes far-transfer learning objectives; traditionally academic knowledge-based instruction which is not tied to a specific job, as opposed to training which traditionally relies on instruction rather than education, and is often task oriented or job related.

Educational Design: Also known as Educational Systems Design, **t**his term refers to the planning of all educational activities, projects, and programs that are associated with the pursuit of particular intended educational outcomes.

Educational Objectives: These are descriptive statements of outcomes of planned educational projects or programs.

Educational Technology: The combination of instructional, learning, developmental, managerial, telephonic and other technologies as applied to the solution of educational problems.

EduTools: EduTools provides independent reviews, side-by-side comparisons, and consulting services to assist decision-making in the e-learning community. EduTools is owned and operated by the Western Cooperative for Educational Telecommunications (WICHE).

Effectiveness: (1) A measure of whether a procedure or action achieves its purpose;
(2) The ability to achieve the objectives set for a project or programme. When used in relation to educational courseware, the term 'effectiveness' refers to the ability to effect changes in the learner's understanding, skills, competencies, attitudes and dispositions.

Efficiency: Efficiency as used in the physical sciences is the ratio of useful work performed to the total energy expended or heat taken in. In economics and business it relates to the minimization of resource consumption (or possibly the maximization of return on investment). When used in the educational context' Efficiency' implies having the desired effect but it does not imply maximizing effectiveness. Where efficiency is the goal, a balance must be struck between costs and benefits.

EICA: (See Energy Industry CBT Consortium)

EJB: Acronym for Enterprise Java Beans.

E-Learning: As a noun, this generic term refers to all organized learning activities, experiences, courses and programs (typically credit but also non-credit) created and provided by an educational or training organisation that are delivered and supported through the use of information and communications technologies networks (such as the Internet or intranets) and designed to support the development, exchange, and application of skills, knowledge, attitudes, aspirations, and behaviors. The term e-learning includes forms of learning, roles for learners, structures for constructing knowledge, and relationships among learners mediated by current and

emerging technologies that may not be available face-to-face. E-learning is often used interchangeably with "online learning". As a verb, this refers to the process whereby learners use computer mediated communications to access, from an electronic networked environment such as an intranet or the Internet, learning activities that have been engineered for technology enabled learning, and which enable learners to learn any time and any place.

Electronic mail (E-Mail): The exchange of messages, information and files, transmitted across networks from one computer to another, typically accessible only by the addressee, using software that is designed to store and forward messages received or sent.

Electronic Mail Software: The computer programs that facilitate computer-to-computer communications among users in any location.

Electronic Mail Systems: CMC systems that facilitate exchange of messages between individual users (e.g. Microsoft Outlook, Pegasus Mail)

Electronic Page Turning: A criticism applied to forms of computer-based training which are based on the continuous movement from one screen to another as the principal form of interaction. This type of program is considered ineffective as a learning tool.

E-Mail: (See Electronic Mail)

E-mailing Lists: Commonly known as "mailing lists", these are text-based electronic communication channels that support group-based discussion.

EML: Acronym for Educational Modeling Language

Energy Industry CBT Consortium (EICA): EICA is an international association of large energy companies that use technology-based training and which acts as an e-learning consumer and participant in standardization efforts. The EICA provides an organizational structure for IT, HR, Training, EH&S, and other professionals to collaborate on shared technology-based training objectives. The EICA mission is to establish the energy industry as one of the leading industries influencing the future of technology- based training, and to more effectively manage the growth of technology-based training within the energy industry. (See at www.eicaonline.com)

Environment Analysis. In the education sense, the context of any instructional system, both where the instruction will occur and how the instructional materials will be used.

ERASMUS: European Community Action Scheme for the Mobility of University Students Lisbon Convention - the international UNESCO convention on the recognition of degrees, diplomas and studies recognition - formal acknowledgment by a competent authority (university, professional association, etc.) of the value of a foreign educational qualification with a view to access to educational and/or employment activities (Europe and U.K.)

Ethernet: A local area network system first developed by Xerox Palo Alto Research Center and later made a standard. Ethernets operate at 10 Mbps over coaxial cable and link computers and servers in 'daisy-chain' fashion.

Ethical Standards: In the context of educational technology, this refers to guidelines issued for the appropriate use of technology and the maintenance of privacy of the contents of the system. In university, ethical standards are often described in Acceptable Use of Computers Policy Statements, especially where there is concern about the security of the system or the availability of objectionable or illegal materials obtained through the system.

ETSI: European Telecommunications Standards Institute.

European Credit Transfer and Accumulation System (ECTS): The European Credit Transfer and Accumulation System is a system based on the student workload required to achieve the objectives of a programme of study. These objectives should be specified in terms of learning outcomes and competences to be acquired. ECTS is based on the principle that 60 credits measure the workload of a full-time student during one academic year. Hence a cycle 1 Bachelors qualification requires 180 credits. The student workload (contact time and self directed study) of a full-time study programme in Europe amounts in most cases to around 1500-1800 hours per year and in those cases one credit stands for around 25 to 30 working hours. ECTS is a system for increasing the transparency of educational systems and facilitating the mobility of students across Europe through credit accumulation and transfer. Credit transfer is guaranteed by explicit agreements signed by the home institution, the host institution and the mobile student. (Europe and U.K.)

Evaluation: (1) A process involving the systematic acquisition of information and feedback on the use, worth and impact of some object, program or process in relation to its intended outcomes.
(2) The judgment of the value of the learning material with reference to a specific set of criteria.

(3) Any process leading to judgments and/or recommendations regarding the quality of an academic unit.

Evaluation Team: (See Review Team)

Ex Ante Assessment/Evaluation: Assessing/evaluating quality before a programme or institution is launched, often as a condition for granting a license to operate or national or professional accreditation.

Ex Post Assessment/Evaluation: Assessing/evaluating quality after a programme or institution has been in operation in order to establish strengths and weaknesses, for example higher education audits undertaken by the UK Higher Education Quality Assessment Agency.

Examination (Exam): The term examination normally refers to a formal written and/or oral test taken either during or (ore usually) at the end of a course unit or module. Tests within the course unit or module are usually classed as continuous assessment, if they contribute to the final assessment.

Experiential Learning: (1) A method of learning which presents a problem or a complex task for the learners to deal with. The learners are encouraged to draw general conclusions and establish general principles that may explain or predict across a range of similar situations.
(2) Learning acquired through experience, usually within a workplace setting, rather than as a result of formal education, instruction or training.

Expert: Adjective indicating the possession of special knowledge or skill in a subject. A noun describing a person having special knowledge or skill. In the educational context, an individual who has experience, knowledge, and expertise relative to the context, learner, and instructional task.

Expert Systems: Computer-based systems in which the knowledge of a field is captured as a knowledge data base, which can be sorted and selected by an algorithm programmed with a set of rules derived from an expert. These systems help to formulate solutions to problems. In education, future possibilities include the development of expert systems to aid instructional design decisions based on current databases of instructional research which would then recommend an optimal instructional strategy for implementation.

Explicit Knowledge: Knowledge and information that has been expressed and is available to others; opposite of tacit knowledge.

Extensible Mark-up Language (XML): The adaptation of SGML that is replacing HTML as the mark-up language for authored text on the World Wide Web. Unlike HTML, it has the capacity to support the definition of new formats and is therefore much more versatile than HTML.

External Evaluation: Evaluation of the quality of a academic unit carried out by a selected team of experts who are not connected to the institution providing the unit for evaluation. (U.K.)

External Expert: Member of a selected team evaluating an academic unit but who is not linked to the institution providing it.

External Studies: Instruction that takes place somewhere other than a central campus, such as a classroom remote from campus, and that includes a variety of delivery options, usually telephone enabled.

Facilitated Learning: E-learning that includes interaction with at least one other individual, such as the facilitator or moderator, and is guided by one or more persons who most often have specialized training to facilitate or moderate e-learning.

Facilitation Technique*:* A learning method in which the emphasis is on helping others to learn in an active way, rather than instruction, which is passive.

Fading: A technique of cognitive apprenticeship whereby the instructor gradually withdraws support from the leaner while simulatneously transfering control of the learning process to the learner.

FAQs: (See Frequently Asked Questions)

FE: Acronym for Further Education.

Feedback: Information that is gathered or received on the impacts of some object, program, or process. In the context of teaching and learning, this refers to information given to students on their progress and/or performance in a learning activity (course, unit, programme, etc). The information can take various forms such as scores, marks, grades, verbal and written comments, model answers, suggestions for further reading, etc., and is designed to enable the learner to understand more clearly the reasons for, and reflect on, his/her performance, with the aim of subsequence performance improvement.

Fibre Optic Cable: Hair fine, flexible glass strands that use light signals to transmit information in either analog or digital formats. Fibre optic cable has greater capacity than copper or coaxial equivalents and, moreover, is not as subject to interference or noise. Fibre optic cable is utilised for (inter alia) high-speed, multimedia networking.

Fibre Optics: The use of fibre optic cable.

Field Trials: In the context of teaching and learning, a method of the developmental testing of a learning component (scheme, unit or learning materials) before full operation, with the intention of collecting feedback, to assess its performance and decide on any modification necessary ,that uses relatively large samples of learners (more than 25) in circumstances as similar as possible to the real world conditions in which the materials will be used eventually. Sample sizes of greater than 25 enable parametric testing to be undertaken of the results.

File: A block of information stored on a machine readable magnetic media such as a floppy or hard disk or a tape. A file may contain any information that is available in a digitised format, including executable computer programs, text documents, numeric data, audio and video images, etc.

File Server: A special type of high volume capacity computer peripheral operating within a network that is dedicated to the use of the storage of users' data, which can be accessed by other computers to retrieve the users' data.

File Transfer Protocol(FTP): A widely-used protocol for transferring files between one remote computers to another over a network. One computer will run an ftp server, which allows people on other computers to run ftp client programs to connect to it, upload, and download files.

Final Examination: A terminal summative assessment task (test, quiz, essay paper etc), set for students to complete at the end of a period of study (semester, term or teaching session.

Firewall: A computer program designed to act as a security system for computers and networks, and prevent data theft, file corruption and network disturbance. Computers inside a network firewall can access other computers on the Internet but Internet computers are prevented from accessing any computer inside the firewall.

First Degree: A first cycle qualification, as defined by the Bologna Declaration, normally awarded after successful completion of a minimum of three years or 180 ECTS credits is designated a first degree and is usually given the title of Bachelor (of Arts, Sciences, etc.). (Europe and U.K.)

Fitness For Purpose: A dimension of Total Quality Management which, in the context of teaching and learning, is one of the possible criteria for establishing whether or not a unit meets quality standards, measured against what is seen to be the goal of the unit, and national subject guidelines. (Europe and U.K.)

Flexible Delivery: The provision of learning experiences in a variety of ways (e.g., face-to-face, workplace, print, interactive multimedia) that are responsive to learners' needs.

Flexible Learning: Generally, this term refers to learning arrangements that allow learners access to learning opportunities and resources at a time, place and pace that is convenient to them. Flexible learning environments characteristically have media and classroom strategies; a learner-centred philosophy; recognition of diversity in learning styles and in learners' needs; recognition of the importance of equity in curriculum and pedagogy; use of a variety of learning resources and media; fostering of lifelong learning habits and skills in learners and staff. Flexible learning environments may, but need not, facilitate open learning.

Floppy Disk: A thin, plastic flexible disk on which computer programs and data can be saved outside of the computer. The main diskettes now used are 3.5-inch disks that come in a hard plastic case, previous floppy disk were 5.25 inch and came in thin pliable (floppy) cardboard- like cases (hence the name).

Fog Index: A term used in respect of learning materials which comprises an index of readability, based on a formula that involves the average number of words in a sentence and the average number of syllables per word; basically, the longer the words and the sentences, the 'foggier' or less readable the text.

Formal Assessment: The evaluation of learning through a scheduled assessment task (assignment, examination, etc.) set for students under pre-determined and known conditions which results in scores, marks or grades which are used as part of the determination of the student's performance or achievement on a particular learning task or activity.

Formative Assessment: Assessment used during the learning process to give students feedback on their progress towards achieving the intended learning outcomes in a subject or unit. Hence its main objective is to help learners to identify what they need to do in order to improve their work. The term is used to refer to any assessment whether graded or ungraded, which has as its primary function the measurement of learning achievement, in order to encourage student learning by the provision of feedback on performance. It can be contrasted with summative assessment, which takes place upon completion of the learning activities.

Formative Evaluation: (1) Generally used to refer to process of measurement of the use, worth or impacts of some object, program, or process, in relation to its intended outcomes, in order to monitor and improve its progress.
(2) Evaluation of learning materials to ascertain any weakness in instruction so that revisions can be made to make instruction more effective and efficient.
(3) The assessment of learning that occurs while a project or course is in progress, with the aim of identifying problems and addressing them immediately.

FPS: (See Frames Per Second)

Frame: Two complete scans of the video screen at 1/30 second. A frame is composed of two fields (each 262 lines). A single frame is a standard CAV videodisc reference point. There can be as many as 54,000 addressable frames on one side of a CAV videodisc.

Frames Per Second (FPS). A measure of the speed, and hence video smoothness of a video-conferencing system. Video-conferencing systems typically range from 5 FPS for low cost software-only systems to 30 FPS for high level systems using up to 2 mbps network speed.

Framing Monitor: Monitor used by lecturers when undertaking a lecture which is being delivered by video conferencing, or when filming a lecture, it is used to the lecturer can see him/herself, and thereby ensure that they are in shot.

Free Standing Institution: (See Single-Mode Institution)

Frequently Asked Questions (FAQs): A listing of the most widely asked questions that are typically provided for novice users of a computer program along with the answers to the questions.

FTE: (See Full-Time Equivalent)

FTP: (See File Transfer Protocol)

Full Time Equivalent (FTE): Term used to measure the number of students in an educational institution as part of resource and costing calculations. A full-time equivalent student is normally a student enrolled on a full time campus based unit taught in face to faced mode. Various conversion values (typically, 0.5, 0.3, 0.25) are used to convert part-time students (both on campus and distance) to full time equivalent values.

Functional Context Training: A model of instruction which works by moving the learner from undertaking simple, familiar tasks to more complex tasks with frequent opportunities for practice.

Functional Specifications: In respect to IT equipment, this refers to what a new (or upgraded) computer system should be expected to do, i.e., what services it will deliver to those who will use and maintain it. This listing of a computer system's capabilities can be compared to what can be bought from a commercial vendor or built by developers.

Funding Proposal: A proposal to a funding agency which normally contains the following elements**:** a need or needs to be addressed; a vision or solution to address the need; goals and objectives; a plan to achieve the objectives and goals; a plan for the dissemination of results; a budget and timelines; and a plan for evaluating progress in achieving the goals.

Gantt Chart: A diagram that shows all tasks and deadlines necessary for completing a project, and they way in which they are interlinked.

Gap Analysis: Analysis which **a**ssesses the gap between existing versus desired skill levels, competencies, and certifications. A term typically used in the corporate as opposed to the education environment.

GB: (See Gigabyte)

Gbps: Gigabits per second.

General Credit: The amount of generic credit assigned to an element of learning. (U.K.)

Generative Instruction: An approach to learning in which students encounter subject content in such a way that they are able and encouraged to construct their own meanings from the instruction by generating their own educational goals, organization, elaborations, sequencing and emphasis of content, monitoring of understanding, and transfer to other contexts.

GIF: (See Graphics Interchange Format)

Gigabyte (GB): Unit of volume used in information and communications technology to measure (for example) network speed, computer storage capacity, etc., the term generally refers to 1,000,000,000 bytes (1,000 megabytes), although the actual number is 1,073,741,824 bytes (that is 10243), as a kilobyte is 1024 bytes.

GLH: Acronym for Guided learning hours.

GNVQ: General National Vocational Qualification. A broad-based vocational qualification offered as an alternative to 'A' levels. (U.K.)

Goals: General statements of intent (for example learning goals)

GPRS: Acronym for General Packet Radio Service.

Grade: Used generally to refer to a evaluation based on the overall performance of a student within an individual course unit or module in a study programme. More specifically, a series of ranked descriptors which represent a subset of marks or scores obtained following an assessment. Grades usually have attached to them a written description of the skills, knowledge, etc., associated with the ability required to obtain a mark within the defined subset. Hence, for example, a student could obtain a score of 75% out of 100% in an assessment, where marks in the subset 70-100% were deemed to be in the A grade, and a written descriptor for that grade could be "Excellent". The term refers to both the grades achieved by students, and the process of determining the grades.

Graduate Studies: A course of study undertaken after completion of a first degree (usually a Bachelor's degree) and which normally leads to a second cycle degree (Masters or Doctoral).

Graphic Devices: Items, symbols, and the method of displaying them in a text design (in both a physically printed page and, increasingly, on screen) that are used to cause a change or prompt an action by the person viewing them. For example graphic devices can be used to emphasise a point, direct the learner's attention, highlight the relationship between ideas or provide learners with cues as to the next activity in which they should be engaged. Commonly used graphic devices include visual icons (the picture of an eye to prompt reading, or a pen to prompt writing), tables, charts, symbols, and the shading of text, the use of borders, and different fonts.

Graphics Interchange Format (GIF): A standard format for compression of images. Images on web pages are commonly stored in the GIF or JPEG formats.

Group Assessment: The assessment of the performance of a group of students together, rather than of individuals. A single output, produced jointly by members of a group, which is then assessed.

Group Browsing: The process whereby a group of students access a series of Web sites by using a shared browser window and thereby interact with each other and the tour leader.

Group Investigation: A method of group assessment whereby each student in a group selects a topic, researches it, and then shares his or her findings with the group. The topics are then combined into a joint group report.

Group Ware: Computer software programs and related facilities designed to support group processes by allowing the same information to be shared by several computers simultaneously. With some applications, users can see each other and, from their own computers, and add to or edit text and graphics in a shared document on screen.

Group Work: An approach to learning in which students are provided with an opportunity to discuss and articulate their ideas and share experiences. Group work frequently involves the students focusing on a project/problem/case study and discussing it in small groups. The tutor or facilitator is present, observing the students, moving from group to group and responding to queries as required. Then the groups come together to present and discuss the outcomes of their deliberations with input from the facilitator.

H.320: The H.320 recommendation is a collection of up to 20 individual recommendations on joint protocols and standards, each of which covers a different aspect of telecommunications, adopted in 1990 by the International Telecommunications Union. Officially entitled "Narrow-band visual telephone systems and terminal equipment," the H.320 recommendation seeks to ensure that any two video-conferencing systems can communicate with each other.

Handbooks: Supplemental elements in learning materials packages which provides information to learners about the way in which the course has been constructed, the assessment modes, teaching methods, etc.

Handheld Computer: Also known as palm tops, these are a class of small computing devices that can be held in your hand, and have similar (but scaled down) functions to laptop and desktop computers.

Hard Drive: Shortened for of the more correctly description of a hard disk drive. Usually integrated with a compute, but can be peripheral device also, and is used to store digital information within a computer, such as programs, data, still and moving images, etc.

Hardware: Generic term used to refer to the physical computer equipment, as opposed to the software. Hardware includes all physical items of a computing configurations such as the central processing unit, the monitor, keyboard, mouse, and also parts of these (such as the hard disc drive, CD ROM drive, sound card, etc.), and also may refer to other peripheral devices, such as printers and scanners that are linked to computers.

HAVi: Acronym for Home Audio Video interoperability.

HCSD: Acronym for High-speed Circuit Switched Data.

HE: (See Higher Education)

HEI: Acronym for Higher Education Institution.

Help Desk Tools: Facilities that assist the technical administration personnel in handling trouble calls and requests for technical assistance.

Heuristic: A rule of thumb or guideline (as opposed to an invariant procedure). Heuristics may not always achieve the desired outcome, but are extremely valuable to problem-solving processes.

High Stakes Assessment: Important assessment element within a degree certificate or professional qualification, the successful completion of which enables an award to be made or permission granted to pass to the next level of study.

Higher Education: Refers to that part of tertiary education of a national education system, which provides courses leading to a first (and possibly higher) degrees or equivalent diplomas. The term higher education always includes Universities, and usually Polytechnics (or their national equivalents, such as Fachhochschulen in Germany, or Ammattikorkeakoulu in Finland). However, depending on the configuration of the national system, the term may also include specialist institutions at university level (e.g. for the visual arts, music, military, medicine, sport, administrative studies, theology), and in some countries (such as the U.K.) further education colleges can also offer all or part of a first degree.

Higher Order Cognitive skills: Refers to cognitive skills considered as operating at second or higher orders, as opposed to the ‘first order’ cognitive skills employed in routine performances. Higher order skills usually include skills such as reflection on performance, problem solving, and critical thinking, and are associated with degree level (or above) qualifications.

Higher Order Thinking: The ability required to understand complex concepts, often ambiguous in nature, and apply sometimes conflicting information to address (rather than solve) a problem (that may have more than one correct answer)

HIPERLAN: Acronym for HIgh PERformance Local Area Network.

HLGF: Acronym for HiperLAN2 Global Forum.

Holistic Marking/Scoring: An assessment method in which the Tutor judges the student's work as a whole, by considering its quality overall rather than singular elements. Although there may be descriptive criteria to guide the assessor, there is no attempt to assign marks to each criterion or individual element. Hence the assessor is judging the whole assessment, rather than the sum of the parts.

Home Study: A mode of learning or instruction that does not require the learner to leave home in order to study.

HomePNA: Acronym for Home Phoneline Networking Alliance.

HomeRF: Acronym for Home Radio Frequency.

House Style: A set of guidelines and protocols for the production of materials in printed or other (e.g. screen based) forms for writers, editors and visual designers which specify the typefaces to be used; type size; length of lines; size of margins; use of bold, italic and other variants of the typefaces; treatment of headings, subheadings, footnotes and so forth; position of table, figures, illustrations and captions in relation to the text; and editing and reference style.

HR-XML: (See Human Resource -XML Consortium)

HTML: (See Hyper Text Mark-up Language)

Human Capital Development: A term used to describe extensions to LMS vendors product offerings that are intended to help clients link learning more directly to the improvement in the productivity and value of their human capital i.e., their employees and partners.

Human Resource XML Consortium (HR-XML): The HR-XML consortium is an independent, non-profit organization dedicated to the development and promotion of standardized XML vocabularies for human resources. The HR-XML consortium produces specifications with the intention of developing industry standards. Among the schemas being produced are those for cross-process objects, competencies, recruiting and staffing, and staffing industry data exchange standards, all of which could be relevant to e-learning systems. (See at www.hr-xml.org)

Hyperlink: A connection between an element (usually a word or phrase) within a hypermedia or hypertext formatted document available on the World Wide Web which, after right clicking the mouse over the selected text, represents the existing artefact in a different way (e.g., makes it smaller larger) or takes the uses to another artefact (hypertext document, pdf, text or data file), held on another computer server elsewhere on the Internet, usually (but not always) by loading the browser for a second time.

Hypermedia: A system of displaying, storing and retrieving digital information that provides one or more linkages among differing elements (words, numbers, still and video images, emoticons, etc) within that information.

Hypertext: Hypertext is based on the HTML programme language is used in the World Wide Web, and is the ability to display data and information in a structured and interconnected way through the use of other media and hyperlinks, and enabling the user to navigate through the data in a purposeful way. For example, a hypertext document looking at economics could be used to link of information together by graphical images (bag of money, picture of dollar bill) that have been hyperlinked to specific paths through relevant and related material from different sources elsewhere in the same or different files in the same computer or elsewhere on other computers linked via the Web.

Hypertext Markup Language (HTML): The coding and formatting language used to create text and documents that are viewed and distributed on the World Wide Web. More especially important, HTML can create tags, which are added to elements in documents, which format and create clickable links to other information or files held on other computers that are also connected to the Internet.

Icon: A symbol that is chosen because it visually resembles, or is identified with, the thing it represents, or the action it facilitates. When displayed on a computer screen icons represent, and enable (by right clicking the mouse over the selected icon) the initiation of, or access to, a command or program. Icons are used in the development of learning materials as signposts or instructions to learners that they are to undertake a new and particular activity; for example, a stylised pencil could be used to indicate to learners that they are now expected to write the answer to a question, or a stylised book or the symbol of an eye might indicate that readers should now read some specific text.

ICT: (See: Information and Communications Technologies)

ICT Teaching: A generic term which includes teaching/studying/learning that makes use of information and communication technology. It usually takes place in blended, virtual and e-learning environments.

IEC: Acronym for International Electrotechnical Commission

IEEE Learning Technology Standards Committee (LTSC): The IEEE Learning Technology Standards Committee (ltsc.ieee.org) produces accredited open standards, reports, and guides as the result of projects authorized by the IEEE Standards Association. LTSC working groups develop draft documents corresponding to projects and, when ready, submit them to a consensus-driven balloting process overseen by the IEEE. Documents become standards after successful balloting and approval by the IEEE Standards Review Committee.

IEEE LTSC: (See Institute for Electronic and Electrical Engineers Learning Technology Standards Committee)

IEEE: Acronym for Institute of Electrical and Electronic Engineers

IETF: (See Internet Engineering Task Force)

ILR: Acronym for Individual Learner Record (Europe and U.K.)

ILT: Acronym for Information and Learning Technologies, for Instructor-Led Training and for the U.K. Institute for Learning and Teaching.

IMS: (See IMS Global Learning Consortium)

IMS Global Learning Consortium Inc (IMS): An independent international industry/academia consortium which develops e-learning technology specifications; offers workshops, developer support, and executive briefings; and is creating a conformance and testing program intended to be licensed by industry and national consortia and organizations. Started by the National Learning Infrastructure Initiative (in turn sponsored by EduCom, now EduCause) in 1997, IMS supports the adoption and use of learning technology worldwide by developing and promoting the adoption of open technical specifications for interoperable learning technology based on the needs identified by its supporting members. IMS is now an independent, non-profit corporation owned by its participating members. (See at www.imsglobal.org)

IMS Question & Test Interoperability (QTI): A specification which describes a data model for the representation of assessment questions and test data, and their corresponding results. The IMS QTI specifies an XML format for encoding online questions, tests, and test banks. This enables the transport of such objects between learning systems. IMS produced this specification in mid 2000. Assessment engines are moving toward adoption of this specification, and it is likely to become part of SCORM in the future.

IMS TI: The IMS Tools Interoperability (TI) protocol which addresses the demand for a usable mechanism for integrating third-party learning tools with core LMS platforms.

In Service Teacher Education: Postgraduate courses and professional and post-experience development training provided to certified practising teachers. (U.K.)

Independent Study: A mode of learning in which learners work through their study materials independently of other learners, often used in connection with open and distance learning, but which can be closed in nature and near in location.

Inert Knowledge: Knowledge that a learner may possess, but which the learner fails to apply in the relevent or appropriate circumstances.

Informal Assessment: Noun - an assessment task conducted by the lecturer which does not result in student scores, marks or grades being awarded or recorded. Verb – the process of assessing learning, that is carried out by (inter alia) informal discussions with tutors and/or peers, student reflection, learning logs, etc., in which the learner's performance may be noted but is not formally scored or graded.

Informal/Formal Learning: Informal learning refers to all learning that occurs outside a formal classroom or instructional event or situation (e.g. in the home during everyday life, or at work). By contrast, formal learning occurs in a recognisable designated learning environment, such as a classroom, a seminar, or a workshop. Formal learning is a class, a seminar, a self-study course—everyone recognizes it as learning. Informal learning is over the water cooler, asking a coworker in the next cubicle to help out, collaborative problem solving, or watching an expert

Information: Data which has been collected, and possibly collated and organised, but not necessarily validated as to its factual accuracy or value.

Information and Communications Technology (ICT): Computers plus the telephonic technology that allows computers to exchange information over integrated networks.

Information Commons: Refers to the arrangement of space and resources for learners in a flexible and user-friendly manner, can be physical or virtual in nature.

Information Design: This refers to the process of displaying and arranging information and data in a user-friendly and pleasant manner, to maximise take up and usage.

Information Highway: Descriptive term used by policy makers and commentators (believed to have been coined by Al Gore USA Vice President) to refer to the process of the joining together of once separated telephone and television technologies networks and computing systems into a single global network of networks, and which gave rise to the development of the Internet and the WWW.

Information Literacy: Refers to a person's awareness of relevant information and resources, and their ability to know where and how to access them, and how to utilise them efficiently and effectively in relevant situations. Often considered to be a core skill for level 1 of a university first degree. (Europe and U.K.)

Information Object: The smallest piece of information that can be used in a learning or training situation, such as an image, a question, a definition, a procedure, or a sound. (See also Oblet)

Information Overload: A situation in which a learner is presented with more information than he/she can usefully assimilate at any one time.

Information Retrieval Systems: Computer programs that facilitate the searching and retrieval of information. Many universities and public libraries use an IRS to provide access to books, journals, and other documents. Most IRS are related to object and query, where queries are formal statements of information needs that are put to an IRS by the user, while an object is an entity which keeps or stores information in a database. Using an IRS, user queries are matched to documents stored in a database.

Input Devices: Devices which enable users to input data into a computer. This term covers keyboards and a mouse, and also more sophisticated devices such as touch screens, tracker balls, light pens, and bar code readers, and microphones (with voice activated software, e.g. ViaVoice)

Inspector: Also**:** peer, external expert. Member of a selected team evaluating a unit but who is not connected to it.

Installation - Server installation: Includes both software set-up tools and installations related services provided by the vendor.

Institute for Electronic and Electrical Engineers Learning Technology Standards Committee (IEEE LTSC): Accredited standards body that consists of a number of individual working groups which are producing accredited approves internationally recognized standards for e-learning interoperability. (See at www.ltsc.ieee.org)

Institutional Licensure: Approval from a State government for an organisation to conduct business as an educational institution. Licensure is not equated with accreditation and therefore need not require any demonstration of quality or ability by the organisation to meet performance standards. (U.S.A.)

Instruction: (1) In computing, a term for a direction in a computer program which defines and effects an operation.
(2) In education, the didactic passive mode of passing knowledge and information to students (knowing by telling or command)

Instructional Design: Also known as instructional systems design or instructional development, instructional design is a self-correcting, systematic approach that enables learners to learn effectively by applying the general scientifically derived principles of learning and instruction to the processes of planning, designing, creating, implementing and assessing effective and efficient instructional tools, objects and procedures in order to achieve specific and intended learning outcomes. Also, used for the name of the discipline which is associated with this activity.

Instructional Designer: Someone who is cognisant of research into, and techniques of, instructional design, and is able to apply this knowledge and expertise to the creation of course materials, suitable for open, distance blended and e-learning, in conjunction with other members of a course team.

Instructional Development: (See Instructional Design)

Instructional Software: Computer programs that enable students to learn new content, practise using content already learned, and/or be evaluated on their knowledge and competence. Instructional software enables tutors and students to (inter alia) demonstrate concepts, do simulations, and record and analyse data.

Instructional Strategies: Utilised as part of the process of instructional design and relates to the sequencing and organizing of learning materials, and determining how to deliver it to the learner.

Instructional Systems Design: (See Instructional Design)

Instructional Systems Development: The process of using instructions design models to develop instructional materials.

Instructional Technology: The systematic use of technology in order to apply strategies and techniques derived from behaviour and physical sciences concepts and other knowledge to the production of instructional materials or the solution of instructional problems.

Instructor Led Training (ILT): A scheduled event conducted by an instructor, either in a classroom or through network delivery.

Instructor Support Tools: Facilities and information designed to assist technical support staff in the provision of technical assistance and advice to instructors using a specific learning application (e.g. Blackboard)

Integrated Assessment: An assessment instrument which attempts to assess a range of the underlying aspects of a specific (or range of) competence(s) or ability(ies), through one assessment and in one activity.

Integrated Electronic Learning Environment: (See Managed Learning Environment)

Integrated Services Digital Network (ISDN): A high-speed public telephone network down which digital data,(alphanumerics, video and audio) can be transmitted from one user or provider to another. In its basic configuration ISDN offered two transmission speeds**:** 56 kbps and 1 Mbps. However, the most common combination today is ISDN2, which is commonly used to support desktop video-conferencing systems, and ISDN6, which is used to support high-end video-conferencing. Some features of ISDN links include**:**
Calling Line Identity Presentation (CLIP), which is used to identify and authenticate the caller.
5-10 times the real data transfer performance of a modem.
very rapid set-up time which means connection latency is virtually negligible.
a sophisticated phantom service, which can drop the live link when it is not servicing network traffic, and then transparently reconnect when necessary.

Intellectual Skills: Skills which enable students not only to recall knowledge and information, but also how and when to apply this knowledge to circumstances and events not encountered during the learning process by which these skills were inculcated.

Intelligent CBI: (See Intelligent Computer Based Instruction)

Intelligent Computer Based Instruction: Sophisticated artificial intelligence tools that have the potential to create instructional strategies for Computer-Based Instruction. Bayesian probability models provide an efficient means of identifying the mastery of objectives and formulating a sequence of bespoke lessons for individual students that are tailored by the programming.

Interaction: In the context of educational technology, this refers to two-way communication between tutor and learner, between learners, and between learners and the learning materials to promote the exchange of information, ideas, and opinions between and among learners and teachers, usually via information and communication technologies with the aim of facilitating dialogues to aid learning. Many of the features of open learning materials in both text and computer-based media are designed to encourage interaction.

Interactive Multimedia: Computer-based software that integrates audio, video, text, and animation to engage and motivate its users.

Interactive Radio Instruction (IRI): The use of radio broadcasts for educational purposes, intended to reinforce learning in classroom settings, which contain instructions for teachers and learners to get them to engage in learning activities related to the broadcast and to actively respond to what they are hearing.

Interactive Teaching Workload*:* Workload usually associated with distance education which relates to interaction time with the learners (via video conferencing, email, bulleting boards, etc.) in other words, the teaching workload after the course or program starts.

Interactive Television: Television broadcasts which are combined with some method of telecommunications link with viewers which enables them to respond to what they are seeing.

Interactive Textbooks: Interactive textbooks are computer based versions of conventional textbooks, which vary in the extent of their interactivity. Simple electronic textbooks just supply the same printed materials on-line, sometimes with use of simple hypertext technology. Two important features, interactivity and intelligence, are present in more advanced systems and at the other end of the spectrum it is possible to get textbooks that are entirely computer-based and have interactive features include paging devices, a word search, and hot text which facilitates navigation. Searching allows any word or combination of words inserted by the user to be located made available for immediate access. Some packages allow the student to add marginal and scratchpad notes with the advantage that these notes can be saved and edited at any time

Interactivity: This refers to all forms of transactions between and among learners, as well as between the learners and the learning resources and the facility for the learner to respond to the learning material and then get

feedback on the response that has been made. Hence it is possible to distinguish between the learners' interaction with the materials, and the level and the speed of feedback provided, and the learner's social interaction with teachers and peers.

Interface: Refers generically to the computer hardware and software required to enable one device to communicate with another or to enable a person to communicate with computers and related devices. A user interfaces can include a keyboard, a mouse, commands, icons, touch screens voice activated software or menus that facilitate the process of communication between a user and a computer. Interface can also refer to the hardware and software required to enable two computers, computer systems, servers, to communicate and exchange digital information.

Internal Evaluation: Evaluation undertaken by an individual on him/her self or an institution of itself. Self evaluation may be part of the assessment process after a learning experience, or it may be undertaken by an institution as a form of quality evaluation for the strategic planning and monitoring process or in preparation for an evaluation by an external body, such as an accrediting agency.

International Standards Organization (ISO): ISO is a network of national standards institutes and works in partnership with international bodies, governments and industry to develop accredited open international learning technology standards through an open process based on industry-wide consensus, and ISO standards become legal mandates in many countries. (See at www.iso.ch/iso/en/ISOOnline.frontpage)

International Standards Organization/International Electrotechnical Committee Joint Technical Committee 1 (Information Technology Standards), Subcommittee 36: Subcommittee 36 is responsible for standards for Learning, Education, and Training and is an international standards body creating accredited open standards with membership open to national bodies only. (See at www.jtc1sc36.org)

International Technology Union: International Group which draws up the international protocols for video and data-conferencing. See at: http://www.itu.int/.

Internet: A global publicly accessible computer network that links computer networks, which use a common communications protocol and addressing scheme, via a variety of different types of telephonic connections including radio, satellite, and telephone, enabling users to communicate freely and to share resources with each other. The Internet is not privately owned or maintained but is developed and sustained by the individual national, regional, commercial and institutional networks that make it up. Its uses are expanding as fast as the Internet is expanding and it is used to facilitate all facets of human activity that require communication.

Internet2 or UCAID: (University Corporation for Advanced Internet Development) is a non-profit consortium (http://www.internet2.edu/) which develops and deploys advanced network applications and technologies, mostly for high-speed data transfer. It is led by 207 universities in the United States and partners from the networking (Cisco Systems), publishing (Prous Science) and technology industries (such as Comcast, Intel, Sun Microsystems). There has been a recent trend in the media to report on a network called "Internet2" and some sources go so far as to suggest Internet2 is a network wholly separate from the Internet. This is incorrect as Internet2 is a consortium and not a computer network. However, many news sources have adopted the generic term Internet2 because it seems like a logical name for a next-generation Internet backbone.

Internet Based Training: A type of computer-based learning or instruction in which the learning materials or resources are accessed via the Internet.

Internet Engineering Task Force (IETF): IETF is an open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. IETF produces specifications and standards (known as "requests for comments" RFCs), guidelines, and standards. (See at www.ietf.org)

Internet Relay Chat: A facility for synchronous interaction between two or more users, over the Internet by using text messages.

Internet Service Provider (ISP): An organization, such as a phone company and other commercial telecommunications service providers, that provide access to the Internet for users.

Interoperability: In computing, refers to the ability of two or more hardware devices, or software routines, to work together.

Intranet: A closed user network, usually web based, that is internal to an organization, and cannot be accessed by other external users, as it is not linked to the Internet. A local area network (LAN) is an example of an Intranet.

Intuitive Approach: An informal and unstructured approach to undertaking tasks and addressing problems, which relies wholly on a person's own experience of, and feelings toward, the subject.

IP: Acronym for Internet Protocol.

IRC: (See Internet Relay Chat)

ISDN Cable: Integrated Services Digital Network cable which enables, for example, one to one and one to many video conferencing.

ISDN: (See Integrated Services Digital Network)

ISO/IEC JTC1 SC36: (See International Standards Organization/International Electrotechnical Committee Joint Technical Committee)

ISO: (See International Standards Organization)

ISP: (See Internet Service Provider)

ISSS: Acronym for Information Society Standardization System

IT: Acronym for Information Technology.

ITU: (See International Technology Union)

J2ME: Java Platform 2, Micro Edition.

JANET: (See Joint Academic Network)

JA-SIG: (See Java Administration Special Interest Group)

Java Administration Special Interest Group (JA-SIG): JA-SIG is an independent organization designed to increase the flow of information between educational institutions and companies involved in the development of administrative applications using Java technology. JA-SIG plays a dissemination and networking role and is supporting the development of a free, open source, open standard portal for higher education. (See at www.ja-sig.org)

JAXM: Acronym for Java API for XML Messaging.

JDBC: Acronym for Java DataBase Connectivity.

JES: Acronym for Java Embedded Server.

JMS: Acronym for Java Messaging Service.

JNI: Acronym for Java Native Interface.

Joint Academic Network (JANET): The computer network originally set up to provide interchange of information and internet connectivity for higher educational institutions in the UK**.**

Joint Photographic Expert Group (JPEG): This is a format for compressing and storing high-resolution black and white or colour pictures. It is the accepted international standard for data compression of all still images.

JPEG: (See Joint Picture Expert Group)

JTC1: (See International Standards Organization/International Electrotechnical Committee Joint Technical Committee)

JVM: Acronym for Java Virtual Machine.

KB: (See Kilobyte)

KBPS: (See Kilo Bits Per Second)

Keyboard: A peripheral or interface device similar to a typewriter which is used to enter data and software commands into a computer. In addition to the letter keys in standard QWERTY format, most keyboards have number pads and, control, alt and function keys that make the computer software easier to use. Some keyboards have additional letter keys for foreign languages (e.g. the ñ key for Spanish)

Kilo Bits Per Second (KBPS): A generally accepted industry standard measure of the speed of computer and telecommunications networks. Some examples of usage of the term include modems, which are usually 28 or 56 kps, ISDN2 which is 128 kps, and Local area networks which are between 10,000 kbps and 155,000 kbps.

Kilobyte (KB): Unit of volume used to measure the capacity of computing equipment, and equivalent to 1024 Bytes.

Knowledge: Awareness or familiarity gained by experience (of a person, fact, or thing)or a theoretical or practical understanding of a subject, language, etc and, in the philosophical sense, true, factually verified and justified belief; certain understanding, as opposed to opinion. Knowledge may well be “tacit” knowledge, in other words contained only in the individual’s mind and not recorded or shared with others.

Knowledge Economy: An economy that is driven by ideas and knowledge, rather than material resources and manufacturing capability. In such an economy value added comes from constant innovation and technology transferred into services and manufactured products. Knowledge economies are dominated by knowledge based industries such as computer programming and pharmaceuticals. The resources of the knowledge economy are not raw physical materials or finished goods, but people with the skills and expertise to continuously re-engineer and recombine existing data and information to create new knowledge, products, and services.

Knowledge Media: A collective term which normally refers to the World Wide Web and interactive multimedia.

Knowledge Worker: Someone who is employed on the basis of their intellectual capacity and abilities, rather than for their manual dexterity or physical strength.

KVM: Acronym for Kilobyte (Java) Virtual Machine.

LAN: (See Local Area Network)

LCD: (See Liquid Crystal Display)

LCMS: (See Learning Content Management System.

LDAP: Acronym for Lightweight Directory Access Protocol.

Learnativity: A way of being that incorporates learning and working in an integrated system of performing tasks, capturing information, managing knowledge, and learning, all leading to the creation of new knowledge.

Learner: Although the term is used interchangeably with student and trainee, leaner is a more general term than student. A learner refers to any person receiving training or education in a formal or informal environment or undertaking a formal or informal learning experience

Learner Centred Classroom: Learning paradigm in which learners are encouraged to choose their own learning goals and/or projects, and which is based on the belief that people have a natural predisposition to learn; learn better when they work on authentic tasks; benefit from interaction with peers during the learning situation.

Learner Centred Education: An educational philosophy which is centred on the learner's needs, the ability and opportunity for him/her to determine them, and which finds reflection in learning processes that provide (inter alia) flexible study modes, with negotiated learning objectives, and learning methods, negotiated methods of assessment and assessment tasks and an array of learner support mechanisms from which the learner is free to choose.

Learner Characteristics: Factors in a learner's background that impact the effectiveness of their learning, and can include age, gender, nationality, religion, etc.

Learner Control: Required for Learner-controlled Instruction. The provision of a number of navigational and other tools which enable learners to take control of computer-based learning materials and use them in whatever way they wish. For example Learner Control would enable users to navigate the materials in different ways, and not be constrained as to the route they take through the material, or the use to which they put it.

Learner Controlled Instruction: An instructional mode in which one or more key instructional decisions are delegated, and made by, to the learner.

Learner Profile Manager: Learning is ultimately about learners, and therefore e-learning systems typically keep information about the learners that use them. This information includes: personal data, learning plans (degree plan, for example), learning history, certifications and degrees, assessments of knowledge (skills and competencies), and the status of participation in active learning (registration, progress). The sum total of this information is called a learner profile, and e-learning systems require a component that manages this profile. The learner profile manager makes learner information available to other components and retrieves and updates learner information on the basis of data reported by other components.

Learner Registrar: E-Learning term – the learner registrar component provides learners with access to learning offerings and administers the business processes related to that access. The complexity of the process can vary immensely, from a simple click on a catalog item by a learner that provides immediate access, to complex processes that include instructor approval, checking seat availability, prerequisite checking, payment calculation, payment processing, cancellation and refund policies, etc.

Learner Tools/Facilities: Term used primarily in distance education to refer to tools and facilities that are used learner at their location, (be it home, work, or elsewhere)

Learning: As a noun this refers to the relative change in a person's knowledge or behaviour due to a specific experience. As a verb this refers to the process of deriving or acquiring meaning, knowledge, understanding or information from some external artifact or object or via a process of internal reflection, intuitive process or

logical reasoning, following which there is a demonstrable change in the learner's cognition and behavior, and/or an increase in the sum of knowledge possessed by the learner (and, possibly, by society at large). Learning can refer to many aspects of human behaviour, e.g. learning to drive, learning about relativity, etc

Learning Activity: An activity designed to promote learning by a student, and which can take a variety of forms – reading a book, engaging in discussion, hearing a lecture, etc. The term is usually applied to formal learning, but learning activities can also take place in informal settings.

Learning By Designing: This refers to learning activities that utilise the design of some artifact, object, process, to stimulate learning by the student.

Learning Centres: Refers to repositories of learning resources (books, audio and video tapes, multi-media, etc.) held in one central point or building, often accompanied by learning facilities (computers, printers, etc.) and learning advisors providing support, tuition and guidance for learners. When used in connection to distance learning, learning centres are often referred to as access centres or (as in the case of the U.K. O.U.) regional centres, and are used to provide local delivery of open and distance learning materials and support to learners.

Learning Communities: These are purposeful groups of individuals groups that develop because of shared concerns and interests, and which thrive on the pursuit of these shared goals, which can include self improvement, educational or professional development. Learning communities are committed to supporting one another's and their group's development. Learning Communities can meet either physically in one place and communicate face to face and in real time (as, for example, a Book or Reading Group) or they can meet virtually from across countries or continents and communicate via technology and asynchronously (as, for example, internet user groups, or e-learning community members)

Learning Content Management System (LCMS or CMS): An LCMS is an electronically enabled multi-user content management system specifically intended for learning objects where learning developers can create, store, reuse, manage, and deliver digital learning content from a central object repository. Whereas an LMS manages the processes surrounding learning, and LCMS manages the process of creating and delivering learning content, just as the names indicate. The features of typical LCMS products include:
1. Content Assembly tools.
2. Learning Content authoring tools may be included with the LCMS.
3. Authoring tool integration that supports the registration, storage, and retrieval of objects by any standards-conformant authoring tool.
4. A metadata-enabled content repository (including storage devices with some content management functionality and an offering catalog).
5. A simple learner profile manager, although these are becoming more sophisticated in LCMS products.
6. A content delivery system that allows the LCMS to locate, retrieve, and serve up the appropriate objects to the delivery environment.

Learning Contract: Agreement between staff and learners on learning activities to be undertaken, evidence of achievement to be presented and assessment criteria for a given area of work. (U.K.)

Learning Designs: Plans, approaches, paradigms and models used for approaching the learning process in different ways.

Learning Journal: This is a personal record of a student's reflections on his/her learning experiences and processes, over a specific period and usually refers to a specific learning event or series of events (e.g. a course) and is also known and a Learning Log. The journal provides a personal insight into the changes in the views, beliefs, ideas, perceptions, etc. of the journal keeper about their learning experiences as a result of learning activities (e.g. engagement with subject matter, interaction with peers). Learning journals can be kept just for

the student to map his/her personal learning progress, or they can form part of the student's formal or informal assessment processes.

Learning Level: An indication of the level of difficulty/sophistication of the content of an element of learning (or course unit) usually in relation to the higher education qualifications framework. Typically learning levels are represented by a series of sequential steps expressed in terms of range of generic skills and outcomes, against which typical qualifications can be positioned. For example within the U.K. qualifications framework there are eight levels from Further Education Level 1 to Doctoral Level 8.

Learning Log: (See Learning Journal)

Learning Management System (LMS): Learning Management System is a term used primarily in the corporate market which refers to an electronic environment (a software application or platform), which manages, delivers and facilitates all electronically supported learning interventions and interactions with learners, and thereby monitors a student's progress through a learning experience from start to completion. An LMS can range from simple course by course registration systems to a complex system that deals with learning plans, prescriptive learning, degree audit/gap analysis, and other learning related functions. Typically LMS have the capability to track individual and group progress, record number of attempts at on-line assessment and scores for them, and register unit and programme completion. An LMS (for the purposes of SCORM) is any system that keeps learner information, can launch and communicate with learning objects, and can interpret instructions that tell it which object comes next. Full featured Learning Management Systems (such as those provided by LearnTone , click2learn, Docent, IBM Mindspan Solutions, Saba) provide the following major functions:

1. Learner profile manager;
2. Learning offering catalog manager;
3. Learning planner;
4. Learner registrar;
5. Connection to delivery environment for delivery of learning offerings;
6. Delivery/participation tracking;
7. Assessment and testing tracking;
8. Assessment authoring tools;
9. Content assembler.

In essence, they are intended to manage the learning environment, providing a place where content can be organized and presented to learners, learning plans can be managed, and where learning activities and results are tracked

Learning Object Metadata (LOM): For learning objects to be used they must be found. It can be challenging to find anything in a large distributed online environment like the World Wide Web or a large intranet. The solution is to store not only learning objects but also descriptions of the learning objects. Thinking of the learning objects as data, the descriptions are data about the data, or metadata. Learning object metadata potentially includes information about the title, author, version number, creation date, technical requirements and educational context and intent. Metadata is used to support search, discovery, and retrieval of learning objects. IMS Metadata specification is a primary source of input to the IEEE LOM standardization process, and has also been adopted by ADL as part of SCORM. IMS produced this specification in late 1999.

Learning Object: Broadly defined, this term refers to any discrete artifact or resource (such as a book, subject or a course) that can be used in the learning process. More specifically and more commonly, however, the term learning object is used in reference to e-learning, and refers to any single or collective entity, digital or non-digital, that can be can be stored, catalogued, searched, and reused, by remote learners during technology enabled learning. Examples of e-learning objects include multimedia content, instructional content, instructional software and software tools that are referenced during technology-supported learning. From an operational

perspective, learning objects are chunks of data that are used by e-learning systems they are authored, stored, cataloged, assembled, delivered, and reported on. A more down-to-earth approach is to think of a learning object as a digital part of a course ranging in size and complexity from a single graphic to an entire course itself. Learning objects can be assembled using metadata to match the needs of individual learners, and multiple learning objects can be grouped into larger assemblies and thereby nested within each other to form an infinite variety and size.

Learning Outcomes: Used in the higher educational context, learning outcomes are statements of achievement, usually expressed in terms of knowledge, skills, attitudes or competencies of what a learner is required to know, understand and/or be able to demonstrate after completion of a learning experience (unit or course). Learning outcomes must be accompanied by appropriate assessment criteria and assessment methods which can be used to judge whether, and to what degree, the learning outcomes have been achieved. Learning outcomes, together with assessment criteria, specify the requirements for the award of academic credits. Credit accumulation and transfer is facilitated if clear learning outcomes are available to indicate with precision the achievements for which the credit will be awarded. (Europe and U.K.)

Learning Portals: E-learning term –Learning portals bring together the e-learning tools, content and delivery environment and organize them into logical groupings based on the role of the individual accessing the portal. Each organization using a portal will define and organize detailed roles based on their needs, but some common overall roles are content developer, instructor, advisor, administrator, and learner. Portals are also used to support learning communities, which are groups of people with interest in a particular topic or subject area. The portal provides a way to identify people with similar interests and provides collaboration tools and content sharing to members of these communities.

Learning Portfolios: Files or folders, which contain students' work, including evidence of their learning. Often used as part of the assessment process, or as evidence in support of a claim for APEL.

Learning Resource Catalogue (LRC): A database of learning resources catalogued according to meta-tags.

Learning Resources: A range of resources which is made available to support the learners' studies, both on and off campus. For example, each learning module could be provided course materials such as lecture notes, software and CBL exemplars, etc. which can be accessed from an Intranet or the Internet. Students could also be granted physical or on-line access to books, journals and off-prints in the library.

Learning Task Analysis: A list of learning goals and objectives that describe what the learners should know or be able to do at the completion of a learning experience and the prerequisite skills and knowledge that the learners will need in order to achieve those goals. (See also Learning Outcomes)

Learning Time: The number of hours an average student will need to complete a specific learning experience or task and thereby achieve specified learning outcomes and gain credits to be awarded after assessment. (Europe and U.K.)

Learnware: Multimedia learning tools comprising computer software and courseware, including multimedia and interactive programs used in technology enabled learning, often utilised as part of distance education.

Lectures: A method of teaching, which was established before the invention of the printing press, and in response to the fact that the number of learners was greater than the number of hand written books available. The aim of lectures is to provide, by means of an oral presentation, usually delivered live and face to face, and at a specific time and in a specific place, basic information and an overview of important issues, and explain important concepts, in relation to a specific topic. It is frequently used as the basis for subsequent group work, e.g. seminars or tutorials, in which the issues raised in the lecture are explored in more depth. Typically, lectures today often utilise a video projector to deliver slides/overheads (e.g. using MSPowerpoint). The possible level of interaction by students (e.g. by asking questions) is normally low, although the lecturer may ask questions

during the lecture or set tasks for the students, to be completed either during or after the lecture. Lectures may be stored for subsequent re-use by means of audio and video tape, but this is unusual.

Lesson Tools: This term refers those integral processes and artefacts that facilitate the development and deployment of educational experiences within a learning program and includes (inter alia) assignments, modules, topics, etc.

LeTTOL: Acronym for Learning to Teach On-line.

Level of Interactivity: Normally used in the context of technology enabled learning, and refers to the potential for the learner to interact with learning materials, which are usually, but not exclusively, provided in multimedia format and accessed via a computer through (for example) a CD-ROM, or via the Internet.

Licensing: The right award to an educational institution or training provider to create and provide a new unit or programme (or provide and deliver a unit developed by another educational institution or training provider), which is granted by an accrediting or licensing agency or body, if the educational institution or training provider meets established criteria, e.g. for quality. (See also Accreditation).

Licensure: The granting of approval for an individual to practice a specific profession (e.g.the law) once minimal requirements have been met. Licensure usually is obtained through an examination process set by a professional body (e.g.the U.K.Law Society and Bar Council, or the British Medical Association) or graduation from an accredited institution. In some professions (e.g.medicine) and in some countries, a period of practical experience also may be required.

Lifelong Learning: A perception of learning as a long-term process beginning at birth and lasting throughout life; a conceptual framework which considers that the learning needs of people of all ages and educational abilities and occupational levels should be met, regardless of their individual circumstances. Lifelong learning is now part of the national educational policy frameworks of most developed countries, and is a recognition of the fact that, in order to meet the changing demands of the global knowledge economy, the process of learning needs to continue throughout working life in order for people to gain continued employment, and for national economies to remain competitive.

LIP: Acronym for Learner Information Package

Liquid Crystal Display (LCD): A way to make letters and numbers appear on a crystal display surface as seen in pocket calculators and computers. The LCD can also project video images from an overhead projector.

Listserv: This term refers both to a predetermined on-line discussion group, and its members, that exchange information, data and messages via e-mail in an area of shared interest and also to the software program that automatically receives, saves and sends messages to members of the group for whom the list was set up. A member who has subscribed to a listserv can automatically mail to the other members of the list by sending an e-mail message to the listserv. Listservs may or may not be moderated by the owner (a person or group of people) who set it up, so listservs can both add new members on the list and remove members from a list both automatically upon request, and in order to remove users who commit abuse. In this respect a listserv differs from newsgroups in that an individual must apply to subscribe (sign on) in order to participate in the activities of a listserv group.

LMS: (See Learning Management System)

Local Area Network (LAN): The linkage of computers and/or peripherals (e.g. printer) confined to a limited area that may consist of a room, building or campus that allows users to communicate and share information.

Log On: To initially connect to a computer network.

LOM: (See Learning Object Metadata)

Low-stakes assessment: An assessment which has no outcomes in terms of external rewards or credits, but whose purpose is to assist the learning process. The outcome of a low stakes assessment may be important to the learner in that it aids his/her personal assessment and development, but it does not have external consequences in respect (for example) of credit or awards.

LRC: (See Learning Resource Catalogue)

LTSC: Acronym for Learning Technology Standards Committee

Lurkers: Derogatory term used for members of a computer conference or online discussion group who read other peoples' messages but don't contribute their own messages, or who do so much less frequently than is the norm for the conference or the group.

MAC: Acronym for Media Access Control.

Mainframe Computer: A large computer that supports many users via a network and has the storage and computing capacity needed for large data sets. It generally stores data on large reel to-reel magnetic tapes that require extensive physical storage space. Users of main-frame computers use dumb terminals or "tubes" that have screens and keyboards to connect to the mainframe. The growth in capacity of personal computer, the development of networks like the Internet and the WWW, allied to the need for mobile working has meant that there is less use of mainframe machines than previously.

Maintenance Agreement: A contract with an outside service or agency, usually to fix a computer network system (or its components) when it breaks, or assist with upgrades to the system.

Managed Learning Environment (MLE): Also known as Virtual Learning Environment, or Integrated Electronic Learning Environment. This expression normally refers to the linking of a Virtual Learning Environment to other related systems within an institution (student data bases, accounting, business and other systems). An integrated computer system that provides the learner and tutor with a comprehensive and integrated matrix of learning support services such as courseware development and delivery, bulletin boards, discussion groups, e-mail, group conferencing, computer assisted assessment and learning management and administration facilities. Examples of commercially-available electronic learning environments include Blackboard and WebCT.

Many To Many Techniques*:* Refers to techniques used in technology enabled learning which allow all participants have the opportunity to take part in the learning processes and interaction. Such interaction is the most common application of computer mediated communication used in distance education programmes and it can be facilitated in open or closed computer conferences. The degree of teacher involvement varies in accordance with the technique being utilised - many to many techniques include, inter alia, brainstorming sessions, case studies, debates, discussion groups, fora, group assignments, project groups, role plays, simulations, and student presentations. (See also One To One Techniques and One To Many Techniques)

Marginal Cost: The additional financial cost or resources accruing from an increase of one unit of output (for example, one additional open and distance learning student)

Mark: The term mark (or marks) conflates the concepts of scores (raw test performance) and grades (levels of performance). A mark is any numerical or qualitative value measure, within a well defined scale, which is assigned to describe a student's response to an assessment task as an indication of the student's relative ability in achieving the specified learning outcomes of the relevant course or unit.

Marking On-Line: The ability to, and process of, marking student generated material (usually supplied in relation to an assessment task) while on-line.

Marking Schedule: A guide to markers, often in the form of a grid, which indicates the marking scheme to be followed when students' assessments are marked. Marking schemes usually includes a scheme for distributing marks by reference to a number of criteria .

Masie e-Learning Consortium: The e-Learning Consortium is sponsored by the Masie Center and is a collaboration of major corporations, government agencies, and e-learning providers focused on the future of e-learning. The consortium is intended to be a community of practice which provides an informational network and disseminates self-generated data on e-learning practices and technology. (See at www.masie.com/masie/default.cfm?page =consortium)

Mastery Learning: A method of instruction which has as its central aim the achievement of adequate performance levels (mastery) on a series of set tasks by all learners.

Matching List: A question set which presents the learner with two lists, and requires him/her to match items in one list with those in the other.

Mb: (See Megabit)

MB: (See Megabyte)

Media Designer: Also referred to as the visual designer; this term refers to the person on a Course Development Team who is responsible for arranging the page layout and placing the illustrations, and integration of print with other media within learning materials.

Mediated Education: (See Technology-Based Education)

Megabit (Mb, Mbit): The megabit is a unit of information storage on a computer, abbreviated as Mbit or sometimes Mb. 1 megabit is 1,000,000 bits which is equivalent to 125,000 bytes or 125 kilobytes

Megabyte (MB): Unit of volume used to measure amount of memory on the hard disk or in the random access memory of a computer, equivalent to 1,048,576 bytes, but is often generically applied to 1,000,000 bytes as well.

Megahertz (MHz): A measure of the clock speed of a central processing unit of a computer expressed in millions of cycles per second.

Memory: In the context of computing equipment, this term refers to the storage locations in the computer, in RAM or ROM.

Meta Tag: A unique HTML tag that identifies the contents of a Web page. Using an agreed international format (see IMS), meta tags contain such things as a general description of the page contents, keywords that can be used by search engines to identify the page, and copyright information.

Metacognition: In the strict philosophical sense of the expression, metacognition refers to thinking about thinking and cognition (memory, perception, calculation, association, etc.) itself, and to the process of thinking or reasoning about one's own thinking and thought processes. When applied more narrowly to learning, metacognition refers to the process of thinking about, regulating and planning one's own learning. Metacognitive activities by a learner include the learner recalling/reviewing what s/he already knows about a topic, identifying gaps in his/her knowledge, planning and undertaking learning activities to fill those gaps, assessing the relevance/importance of new learning acquired as a result of these activities, and the revision by the learner, following a process of reflection, of his/her beliefs about the topic.

Metadata: Information about learning objects that allows them to be stored in and retrieved from a database in a meaningful way. Metadata describes what is inside a chunk of learning. Learning content and catalog offerings must be labeled in a consistent way to support the indexing, storage, discovery (search), and retrieval of learning objects by multiple tools across multiple repositories. Data used for this purpose is referred to as learning object metadata. To interface effectively with other components, content repositories must maintain a searchable index of learning objects and, ideally, descriptive information about the structure and properties of the objects. This descriptive information is called metadata, or more precisely, learning object metadata. Metadata is used to support search, discovery, and retrieval of learning objects. If one thinks of a traditional library, the metadata is analogous to a card catalog and the content is analogous to the books. Even in a library the cards are kept separate from the books, and in the digital age content repositories often only contain metadata. The content in repositories takes many forms including text, graphics, assessment questions, photos, animation, simulation, audio, and video. The physical storage and retrieval of content objects may be completely separate from the storage and retrieval of the metadata about those learning objects. In fact, the learning objects may be stored on multiple servers with different characteristics. This is a technologically sound approach both to gain efficiency in delivering the actual content to learners and because different media demand different types of servers.

MHz: (See Megahertz)

Microchip: A silicon wafer or chip containing tens of thousands of electronic components and circuit patterns, and is an integral part of all computers.

Microcomputer (also known as a Personal Computer or PC): A small computer that is desktop size and uses a microprocessor chip (the brains of the unit) to run the computer. Only one person generally uses it at a time, but it can be networked to provide communication with other PCs, mainframes and minicomputers. Both Macintosh and IBM-compatible computers are considered a part of this category of computers.

Microtization: The trend of all electronic components to be produced at smaller sizes, but without loss of power, eventually reaching the point of being virtually invisible to those using them. Microtization is an important driver of technology convergence – as for example when mobile phones contain digital cameras.

Microworld: A computer programme that allows simulations of real world activities, with opportunities for users to manipulate the contents, practice skills and compete with other users – SimCity is an example of a microworld.

MIME: (See Multi-purpose Internet Mail Extensions)

Minimalist Training: A approach to training in which learners are provided with the minimum amount of instruction required for them to master a particular skill.

Mission Statement: A statement within an institution's overall Strategic Plan. A desire for a highly integrated strategic plan (and some times a lack of clarity about the planning process) means that it may be difficult to distinguish between the Vision and the Mission. Generally speaking, a Vision Statement is forward looking, short in length and broad in scope, and expresses what the university wishes to become in the future. A Mission Statement is usually longer and specifies how the University will configure itself in order to achieve the Vision.

Mixed Mode Institution: Also known as Dual Mode Institution. In the higher education context, this term refers to an institution that offers learners a wide choice of study modes, including independent, group-based, face-to-face, mediated or some combination of these; mixed mode institutions seek to maximize learner access to programmes by maximising the flexibility of place and pace of study, and are the result of the convergence of face-to-face and distance modes of study.

MLE: (See Managed Learning Environment)

Modem: This term is an abbreviation for a modulator demodulator, which is an electronic device that allows a computer to undertake two way communication with another remote computer, usually via a computer network (e.g. Wireless LAN, the World Wide Web, etc.) by connection via a telephonic system (telephone cables, satellites, etc.). Modems convert the digital signals from a computer into analog format ("modulates") for transmission and a similar device at the other end converts ("demodulates") the analog signal back into a digital format that the computer can understand. Modems may be external to the computer case but are increasingly built in to the computer. Modems are classified according to the speed with which they are able to send and receive information.

Module: (1) A self-contained computer hardware or software component that interacts with a larger system. **(2)** A sequence of self contained, formally structured learning experiences and/or activities, with a coherent and explicit set of learning outcomes and assessment criteria in a single topic that can be combined in various ways with other modules to build up a programme of study. Modules have an agreed uniform value of educational credits and/or learning hours associated with them, which can be established at institutional, national and/or European levels.

Monitor: (See Visual Display Unit)

Monitoring: The subjecting of the operation of a process designed to achieve a set goal, usually within an agreed time, to regular scrutiny to assess as to whether it is occurring in an effective and time efficient manner. Monitoring is undertaken of development projects, learning schemes, etc. to check on the progress of the project and the effectiveness of management procedures. The term monitoring is often used inter-changeably with evaluation, but it is different, as monitoring is a process actively undertaken throughout the lifetime of the development of some artifact, while evaluation is a finite procedure carried out after the artifact has been produced.

MOO: (See Multi-user dimension Object-Oriented)

Mosaic: Mosaic was **t**he first publicly available Web browser, and was released commercially as Netscape Navigator.

Motivation Building: Process of building the motivation, self esteem and confidence of learners, and includes self-help tools and other facilities that help and encourage students to overcome difficulties that may impede or impair their learning progress and performance.

Mouse: A hand-held pointing device (used on top of a desk) that is connected to a computer and gives directional instructions to the computer, in order to move information (words, numbers, images, etc.) around on a visual display unit. Most mice are external peripheral devices, but some computers have this facility built in, in the form of a roller ball.

Moving Pictures Experts Group (MPEG): This term generally refers to the technical standards for digital video and audio compression which this group is responsible for developing and promulgating.

MPEG: (See Moving Pictures Experts Group)

MUD: (See Multi-User Domain)

Multimedia: The most common usage of this term is in reference to a range of media (such as text, graphics, animation, video, sound, etc) delivered via a computer**.** More specifically, multi media refers to the integrated use and display of static and moving visual images, with sound, data, graphics, and text, by means of computer software, with the user being able to interact creatively with the display. When applied to learning, multimedia refers to educational technologies that encompass the whole range of audio, visual, text and graphics media available, suitably integrated into a coherent package that has been designed to maximize instructional effectiveness and promote learning. When applied to computer hardware, this term refers to a variety of integrated or peripheral devices, such as video and audio cards, CD-ROM, loud speakers, cameras, etc.

Multimedia Design and Development: This term refers to the planning, development and production of computer-based software which integrates moving and static video images, with audio, text, animation, etc. into a single artefact.

Multimedia Systems: Refers to computer hard ware devices such as CD-ROMs and laserdiscs, and the software required to utilize them.

Multiple Choice Questions: A method of assessment in which learners are offered a restricted number of response options for specific questions, usually only one of these is correct (the key) and others are incorrect (the distractors). The learner is then asked to choose that option that they believe to be correct, or which comes closest to their own view.

Multipoint: Communication configuration in which several computers are reciprocally inter-connected with each other in a matrix configuration, and able to share information and data. Multipoint is different form point-to-point, where communication is only between two computers.

Multi-user dimension Object-Oriented (MOO): Software and related facilities that are used to create a type of networked virtual environment which enables synchronous interaction by one or more users in ‘shared spaces’ on the Internet, and which is able to be extended by the users.

Multi-User Dimension/Domain/Dungeon (MUD): This refers to a computer enabled networked and shared virtual environments in which users can interact with other remote users in real time, via access to computer networks, and especially the Internet. Originally text-based, MUDs are increasingly being created with visual materials.

Narrowband: Lower level frequency signals such as the telephone (3000 Hz) or radio signals (15,000 Hz) which can be used for voice communication and to enable computers to network with each other. Narrowband has a speed of 56 Kbps, and has largely been replaced by Broadband. (See also Broadband and Wideband)

National Accreditors: National organizations that accredit public and private degree-granting, nonprofit, and for-profit institutions. They also frequently accredit single-purpose institutions, including distance learning colleges and universities, private career institutions and faith-based colleges and universities. (See also Regional Accreditors) (U.S.A.)

National Framework of Qualifications: The single description at national level, which is internationally understood and through which all qualifications and other learning achievements may be described and related to each other in a coherent way and which defines the relationship between qualifications. (See also Learning Levels) (Europe and U.K.)

National Vocational Qualification (NVQ): Nationally recognised qualifications for competence in occupations and professions. Europe and U.K.)

Navigation: Used to refer generically to the ability of users to find their way through computer software packages. When used connection with technology enabled learning, this term refers the process by which learners can establish paths through the learning material and find their way to content and sequences of learning experiences appropriate to their individual needs and abilities. Menus, Course maps, Help Screens, Icons, Emoticons, Avatars are all used to help learners to navigate through learning materials.

Needs Assessment: When used in connection to the development of technology enabled learning materials, this term refers to the evaluation of the existing environment, allied to a description of the functions that the technology should be able to provide, and the needs which the technology is designed to fulfill.

Needs Statement: When used in connection with the development of technology enabled learning materials, this term refers to the description of the functional needs, technical requirements and security and ethical standards which need to be met by a technology enabled solution.

Negative Transfer: The application by learners of prior knowledge to circumstances and situations in which it is not applicable.

Netiquette: Derived as a conjunction of the words “Net” and “etiquette,” this term refers to the standards of social acceptability that are applied to the content of communications by users during the sharing of ideas, observations, discussions, etc., conducted over the Internet in (for example) usenet newsgroups, listservs, bulletin boards, blogs, etc. on the Internet.

Network: A collection of electronic devices such as servers, computers and printers that are connected together for the purpose of allowing users to share, store, retrieve and print information. Also, the hardware and software needed to connect the computers together.

Networked Learning: Refers to a type of learning in which learners and tutors use information and communications technologies (and more especially computer networks) to promote connections and to exchange messages and engage in dialogue between one learner and other learners, between learners and tutors; between (and within) a learning community and its learning resources. This interaction can occur synchronously, when learners and tutors are communicating at the same time but from different places, or asynchronously, when learners and tutors are not linked to the network at the same time

Networked Virtual Environment (NVE): A term generally applied to virtual environments that are created and shared by one or more users on the Internet.

Networking: The process of creating, maintaining and expanding relationships with other people, organisations and agencies, usually through the use of new information and communication technologies.

Newsgroups Facility: Generally used to refer to Usenet newsgroups and like functions.

NFS: Acronym for Network File System.

NIC: Acronym for Network Interface Controller.

Nominal Group Technique: Originally developed as an organizational planning technique by Delbecq, Van de Ven and Gustafson in 1971, the nominal group technique is a consensus planning tool that helps prioritise issues. Participants are brought together for a discussion session led by a moderator. After the topic has been presented, participants have an opportunity to ask questions or briefly discuss the scope of the topic. Then they are asked to take a few minutes to think about and write down their responses. The moderator then asks each participant to read, and elaborate on, one of their responses. These are noted on a flipchart. Once everyone has responded, and all of their answers have been noted on flipcharts sheets posted around the room Session participants are then asked to choose up to 10 responses that they feel are the most important and rank them according to their relative importance.

Non Formal Education: Education that takes place outside the formal education system (e.g. in the home, during everyday life or at work) on either a regular or an intermittent basis. By contrast, education occurs in a recognisable designated educational institution or environment, such as a classroom, a seminar, or a training workshop.

Norm Referenced Assessment: The evaluation of a learner's performance in an assessment task, in relation to the performance of the students' peers or cohort, hence the students are ranked in accordance as to whether (say) Student A performs better or worse than Student B, and whether Student C performs better or worse than Student A or Student B.

Norm Referencing: The essential characteristic of norm-referencing is that students are awarded their grades on the basis of their ranking position within a particular cohort of students. Norm-referencing involves fitting a ranked list of students' 'raw scores' to a pre-determined distribution for awarding grades. Usually, grades are spread to fit a 'bell curve' (a 'normal distribution' in statistical terminology), either by qualitative, informal rough-reckoning or by statistical techniques of varying complexity. Norm-referencing is based on the assumption that a roughly similar range of human performance can be expected for any student group. Norm referencing can be contrasted with 'criterion referenced' assessment, a mode of assessment which uses objective standards (specified criteria) in the assessment.

Notional Learning Time: The number of hours which it is expected a learner (at a particular level) will spend, on average, to achieve the specified learning outcomes at that level. (Europe and U.K.) (See also Learning Time)

NTO: Acronym for National Training Organisation.

NVE: (See Networked Virtual Environment)

NVQ: (See National Vocational Qualification)

Objective: In the educational context, this term refers to a description of one of the purposes of a course, expressed in terms of the capacities that the learner will acquire and demonstrate; a specific statement about what the learner will be able to do once a learning activity is successfully completed. (See also Aim, Learning Outcome)

Objective Assessment: Evaluation of performance in an assessment task that is designed as far as possible to minimize the variation of possible student responses and thereby exclude the marker's subjectivity; grading is done by presenting a number of factual questions to be answered by one word or a check mark instead of using verbal expression and the organisation of material, requiring a minimum of judgment on the part of the marker. Other stratagems adopted to minimize marker subjectivity include blind marking, where the marker is unaware of the identity, age, gender, etc. of the student.

Objective Structured Clinical Assessments (OSCA): Also known as Objective Structured Clinical Examination (OSCE). A mode of assessment commonly used in the Health related disciplines, which attempts to provide a comprehensive and objective assessment of student performance of authentic professional tasks. OSCAs often also include less authentic assessment tasks, which are designed to test underlying knowledge, skills and attitudes, in addition to the assessment of professional performance.

Objective Tests: Objective tests are a form of objective assessment. Objectivity is achieved by limiting the possible responses a student can make by using multiple choice questions, so that the student's response is clear, unambiguous and within the expected range set by the assessor, which thereby minimizes the subjectivity of the marker in determining the performance of the student.

Oblet: A small object embedded in HTML documents is called and oblet. Its support for HTML page embedding makes it attractive for many applications that use WWW.

OECD: (See The Organisation for Economic Co-operation and Development)

Offering: Any learning event or service that is offered to learners.

Offering Catalog: E-Learning term - A learning offering is defined as content that is assembled into a package of learning (ideally including assessment components) that is then offered to learners as a unit. An offering catalog is a special kind of repository that contains offerings. An offering catalog may associate offerings with learning paths that lead to degrees, certifications and/or skills. Depending on the physical architecture of the learning environment, this catalog may be integrated with a more general content repository or may be a separate component.

OHP: Acronym for OverHead Projector.

OKI: (See the Open Knowledge Initiative)

On The Job Assessment: Assessments which are carried out in the workplace environment of the learner, and under the normal conditions of work, including normal task, resource, time and incentive constraints.

One Level Degree Structure: Also known as one-tier, or one-cycle, whereby one course of studies leads to one level of degree as opposed to a two-tier degree structure, which offers a shorter degree programme and a choice of post-graduate programmes. One Level Degree Structures used to operate in many European States (e.g. Finland) where the first degree was a Master's degree which took four years or more. Following the Bologna Process, most European nations have moved to the 3-2-3 structure (three years for a Bachelor's degree, two years for a Master's degree, and three years for a PhD), and now run the Bachelor's qualification as the first qualification.

One Online Techniques: This refers to techniques used in technology enabled learning which are characterised by the learner being able to retrieve learning content and information on-line, which enables the learner to perform one or more learning tasks with little or no communication with the tutor or with other students.

One Time Costs: Also known as non-recurrent costs; this refers costs that do not recur year after year; for example, purchases of computer equipment which occur at a particular point in time, but whose purchase costs may be written off over a period of years.

One To Many Techniques: This refers to techniques used in both conventional face to face presential teaching and technology enabled learning. Techniques defined as one-to-many are characterised by presentation of learning content to students by one or more individual experts or by interacting experts. The learners are usually not invited to take active part in the interaction, so the communication is typically conducted verbally in a conference (either presential or by video conferencing) or conducted in writing (by emails, discussion groups and bulletin board system) where students primarily have access to read. (See also Many To Many Techniques and One To One Techniques)

One To One Techniques: This refers to techniques used in both conventional face to face presential teaching and technology enabled learning Techniques classified as one-to-one are characterised by a one-to-one relationship and by individualized learning experiences, facilitated by the communication process. Hence such techniques can include synchronous face to face realtime seminars and tutorials and also asynchronous personal computer mediated communication conveyed by written text, or some intermediary state – for example one-to-one tutorials by telephone. (See also Many To Many Techniques and One To Many Techniques)

One Way Video: In the distance education context this refers to a situation such as a live or taped lecture delivered by video, either to a television or a computer, in which the learner can see the tutor but the tutor cannot see the learner. One way video is often supplemented by two-way audio (telephone) between the tutor and the learners located at a distance, so that learners can communicate via a telephone bridge with the tutor and (less commonly), other students.

Online: The status of being connected to a computer or computer network, or having information available through the use of a computer.

Online Assessment: This refers to assessment of student performance in relation to a learning task that is conducted in an electronic networked environment, such as an intranet or the Internet. Methods of online assessment include: bulletin boards, collaborative assignments, computer-marked assignments, email, online discussion, online exams, online quizzes, peer review, portfolios, role play, self-assessment, simulations, web design and development, web publication.

Online Brainstormings: This refers to when persons collaborate online to provide a variety of original, innovative, and imaginative ideas and approaches to a particular topic or problem, and build on the ideas of others, with the aim of developing new and fresh insights. The technique can be used in a variety of circumstances, for example it could be used to design an advertising campaign for a new product, when used in the context of education, the technique encourages learners to think freely and creatively and to expand upon ideas of other learners.

Online Case Studies: Learning tools that are descriptions of real life situations which are accessible via computer networks and designed to help online and mixed mode learners to understand and practice problem-solving and decision-making procedures in complex situations. The case studies can be limited and simple (i.e. text based), or rich and complex (i.e. text, plus pictures, audio clips, website links), depending on the case study topic.

Online Collaboration: This term refers to any collaborative activities that are carried out by users who utilise computer mediated communications to access an electronic networked environment, such as an Intranet or the Internet.

Online Correspondence: A very basic for of online learning which is directed or facilitated through personal, written communication between a tutor and individual students.

Online Databases: Organized, searchable collections of information data that can be accessed remotely and utilised in the learning process;**.**

Online Debates: (1) Largely unstructured synchronous discussions between two or more experts on a particular topic, which are witnessed by learners, who thereby increase their knowledge and understanding of the topic in question.
(2) Structured discussions, usually in real time and within a given set of rules and time schedule, in which two or more learners debate and argue about the aspects of an important issue to clarify their understanding and identify the features and strengths of different approaches and ideas.

Online Delphi: The application of the Delphic analytical method via online communication, to obtain a consensus of opinion from an expert group (whose members are geographically dispersed) on a particular topic, often undertaken using a series of questionnaires, interspersed with controlled feedback of opinion.

Online Discussion Groups: Virtual spaces accessed via the World Wide Web where a group of people exchange information, ideas and opinions on a given topic. (See also Online Forums)

Online Fees Handling: Specialist computer programmes which enable financial transactions, typically, for example, payment of goods and services by means of a credit card.

Online Forums: Used in the context of techno logy enabled learning, online forums (or fora) are non-public virtual spaces accessed via the World Wide Web that tutors and learners access remotely in order to raise and discuss issues arising from their learning experiences, make comments, offer information, or ask questions. The tutor usually acts as a moderator, but a forum can be unmoderated, or moderated by one of the group using the forum. (See also Online Discussion Groups)

Online Interest Groups: Groups of people who utilise computer mediated communications to access virtual spaces to discuss and share experiences on topics of common interest. Learners join online interest group to enhance their knowledge and comprehension of the topic, by means of sharing ideas and information with other learners, and the tutor.

Online Internships: A technique that allows learners, working remotely and using computer mediated communications to access ICT networks, to practice and demonstrate their skills under the guidance and supervision of qualified professionals.

Online Interviews: (1) Realtime interaction between one or more applicants for an employment position and the Appointments Panel, when both are geographically separated, facilitated by computer mediated communications, during which the applicant(s) will be asked one or more structured questions to assess their suitability for employment.
(2) Online interactions facilitated by computer mediated communications between learners who ask focused questions and learning advisors who answer them. The interactions can be synchronous or asynchronous

Online Learning Contracts: Formal agreement between the learner and the tutor, drawn up and agreed via online discussion facilitated by computer mediated communication, which specifies the learning outcomes and tasks to be undertaken by the learner, within an agreed time frame and schedule, including how the tasks should be accomplished and will be assessed, and the specific evaluation criteria that will be applied in the assessment process to judge the student's relative performance in achievement of the learning outcomes.

Online Learning: (See E -Learning)

Online Lectures: These are presentations, usually verbal deliveries, that may be provided once in real time, or continuously and asynchronously via a tape. They may be provided by video link, or through a computer network. They can vary in interactivity, organisation, scope and sophistication – some are just a presential lecture provided at a distance ("talking heads"), while others are in-depth, online presentations, supported with

powerpoint presentations, moving and still images, audio clips, weblinks, etc. that have been designed to encourage and enable learning and facilitate questions online from learners and answers from the lecturer.

Online Pedagogy: This refers to approaches to learning and teaching that are engineered specifically for an electronic networked learning environment, such as an Intranet or the Internet, and for young rather than adult or mature learners.

Online Projects: Online projects are tasks that require the participants to utilise information and resources available through the access to computer networks, such as Intranets and the Internet, in order to be successfully completed. When used in the educational context, online projects are tasks (such as assessments) which may vary in size, complexity and purpose, but which are usually defined in terms of learning outcomes and time constraints, and which require computer mediated communication between the learners in the project groups and access to a variety of online resources in order to be completed.

Online Publications: Generic term used to refer to artefacts usually in printed format (but may have images included) such as ebooks, periodicals, academic journals, company and government reports, articles, etc., that can be accessed via computer networks, such as the Intranet and Internet, and may be either visible as screen images online, or available to be downloaded from the network (as part or complete documents) on to the users own computer and stored for examination later. Access to such documents may be free, or require the user to sign up as a user of the site where the documents are held without paying a fee, or accessed by paying a fee. Frequently, such publications, when in printed form, are available as PDF documents.

Online Role Plays: Enactments of situations, designed by tutors, in which learners act out scenes like actors in a play, in a virtual space by means of some form of computer mediated communication. Role plays vary in design and intent and can be highly structured or spontaneous, and based on actual real life experiences and case studies, or be fictional and fanciful. Role play offers the learners a degree of anonymity, allowing them to express themselves more openly than they might otherwise do. Highly student centred, they enable research and exploration of real life events, in which students can speak and act in character allowing more freedom of expression, and thus become active participants in the learning process. Role play encourages empathy and reflection by requiring students to defend someone else's viewpoint. If used in vocational training, it encourages application of subject knowledge and skills and sensitivity to needs of client groups, as well as developing confidence in verbal communication, and enhancing team skills and collaboration.

Online Skits: A type of Online Role Play in which real or imaginary online people, such as tutors, learners and their alter egos, enact certain actual or imaginary scenarios, to facilitate learning by demonstrating the relevance of certain issues or exploring certain concepts in virtual space. Usually there is an element of humour or parody involved, that is not normally present in Online Role Plays.

Online Socialization: In the context of technology enabled learning, this refers to the computer mediated communication that occurs between tutors and learners, and learners with each other, in an electronic networked environment, such as an Intranet or the Internet, and which is intended, or deliberately structured and designed, to create cohesion and community building within an online group.

Online Software Applications: Computer software programs that users can either execute via a network (an Intranet or the Internet) or download from the network, for execution later.

Online Symposiums: Series of presentations given by a number of experts on a specific topic that may be provided once in real time, or continuously and asynchronously via a tape. They may be provided by video link, or through a computer network. Frequently they are followed by questions from the learners and answers from the experts. (See Online Lectures)

Open Access: A policy of providing learning opportunities for students who do not have formal entry requirements, prerequisite credentials or have not sat an entrance examination. Open access is practised by many universities, more especially those that have been specifically set up for this purpose, such as the U.K. Open University. Open access is now part of many national educational policies in European countries. (See also Open Learning)

Open BRR: OpenBRR (Business Readiness Rating) is an open initiative to designed to assess the pre-requisites required for open source software to become business ready. It packages the knowledge in a framework to assess Open Source Software business readiness in the form of a BRR framework. See the website at: www.openbrr.org/ (See also Open Source Software)

Open Knowledge Initiative (OKI): OKI is a collaborative project involving a number of prominent American universities which is developing and promoting Open Service Interface Definitions that describe how the components of different software environments communicate with each other and with other systems in order to create a free open source course management system for higher education. Working in cooperation with the IMS Global Learning Consortium, ADL, JA-SIG, and others, it is defining open architectural specifications to support the development of educational software. Its architecture will provide a modular and extensible development platform for building both traditional and innovative educational applications while helping institutions exploit existing infrastructure. OKI is designed for broad adoption in the university setting and will simplify the assembly, delivery and access to educational technology resources, while creating a large collaborative community (See at www.web.mit.edu/oki) (See also Open Service Interface Definitions)

Open Learning Package/Material: Learning materials that have been specially prepared or re-engineered to enable the learner to study for a significant part of his time on his own.

Open Learning: An educational philosophy and umbrella term which emphasises maximising the flexibility available to, and choices for, learners in respect to assessment modes, curricula design, entry and exit points, learning materials, learning style, media, pace of study, place of study, subject choice, support mechanisms, etc. which are therefore flexibly structured and designed to meet individual requirements. The term open learning is often applied either to provision which tries to remove barriers that prevent attendance at more traditional courses or to a mode of entry which permits students, irrespective of their previous educational achievements, to enrol in programmes but it also suggests a learner-centred philosophy. Open-Learning courses may be offered in a learning centre of some kind or most of the activity may be carried out away from such a centre (e.g., at home). Open learning can be utilised as an approach within a conventional university for full time students, but it is usually associated with distance teaching and distance teaching institutions, such as the U.K. Open University. (See also Open Access and Distance Learning)

Open Service Interface Definitions (OSIDs): Definitional statements which form the basis for general software contracts between service consumers and service providers, by stating precisely exactly how specific software applications can be used, in terms of any of the possible environments they may encounter. As a result OSIDs allow computer applications to be constructed independently of any particular service environment, which promotes integration and thereby provides users with a wide choice of end-user tools by providing, in essence if not in fact, plug-in interoperability. (See also the Open Knowledge Initiative)

Open Source Initiative (OSI): A not for profit corporation dedicated to managing and promoting the Open Source Definition through the OSI Certified Open Source Software certification mark and programme.

Operating System Software: Software instructional code which controls a computer and runs the programs. Previously, each computer often required an operating system that was specific to that type of computer, but the move to interoperability and the popularity of Microsoft products, which are run by MS-DOS, means that this is less likely.

Opportunity Costs: Term derived from economics, which relates to the notional financial and human resource costs of undertaking an alternative activity rather than the activity that was actually pursued. For example, the opportunity cost of delivering courses at a distance could be determined to compare it with the actual costs of running the same course in conventional face to face mode.

Optical Fibre: A thin glass wire designed for the transmission of waves of light. A single hair-thin fibre is capable of supporting 100 trillion bits per second. In addition to their huge transmission capacity, optical fibres offer many advantages over conventional delivery via electricity through copper cables.

Optional Course: A unit which course and/or institutional regulations do not require students to take as part of a study programme but which is chosen by the student as a result of his/her interests, career aspirations, etc.

ORB: Acronym for Object Request Broker.

Organisation for Economic Co-operation and Development (OECD): Located in Paris, OECD is an international organisation of 30+ members including 21 from Europe, plus, Japan, Korea, Mexico, New Zealand, Turkey, United States Australia, Canada. The OECD is a forum of market democracies in developed nations that work collaboratively to address the economic, social and governance challenges of globalisation as well as to exploit its opportunities. OECD produces annual monitoring reports (e.g. OECD's *Education Policy Analysis*) and specialist monographs on a variety of development topics.

ORR: The Organisational Readiness Rating (ORR) is an extension to BRR (Business Readiness Rating), which enables organisations to tailor the output of the BRR process to accommodate overriding organisational considerations of education providers relative to the use of Open Source Software.

OS: Acronym for Operating System.

OSCA (See Objective Structured Clinical Assessments)

OSCE (See Objective Structured Clinical Assessments)

OSGi: Acronym for Open Services Gateway Initiative.

OSI: (See Open Source Initiative)

OSIDs: (See Open Service Interface Definitions)

OSS: Open Source Software (OSS) is software released under a ISO approved open-source license, which makes the source code available under terms that allow for modification and royalty-free redistribution.

O.U.: Acronym for The U.K. Open University.

Overhead Costs: The sum of all the indirect costs incurred by (say) a project, or cost unit. The overhead costs are a calculation of costs incurred by existing facilities and which are shared. For example a project might include the costs of heating and lighting for the accommodation in which the project team are working. Also within projects, there is usually an overhead cost associated with the administration of the project by the lead institution.

P-12: Schooling provided from pre-kindergarten up to, and including, the twelfth grade. (U.S.A.)

Packet Switching: A method of altering digital signals for their transference between computers, which is designed to speed up the process. In packet switching, the stream of digital signals is divided up into smaller blocks "packets" for transmission. When the packets arrive at the destination computer they are reassembled in the correct sequence.

PAN: Acronym for Personal Area Network/Public Area Network.

Paradigm: An overall concept or descriptive model used to express and explore complex ideas and processes – hence one may speak of (say) the teaching and learning paradigm associated with distance education.

Pattern Template: A accepted design for the assembly of data and information that reflects predictable patterns of usage created from previous observations of usage, behavior, and learning. Pattern Templates are designed to express the underlying principles and replicate the best practices of a particular learning task, which are then used to create and provide the bespoke learning activities and materials.

Pay Back Period of Return: The period of time (weeks, months, years) required to pay back the original investment of staff salaries and other costs associated with a project. So, for example, it would be possible to work out the pay back period of return for the development of an on-line learning package, by working out the total costs of development and the savings associated with running the course for each year, and dividing these total costs by the annual savings.

PC: (See Microcomputer)

PC: Acronym for Personal Computer.

PDA: Acronym for Personal Digital Assistant.

PDF: (See Portable Document Format)

Pedagogical: Of, relating to, pedagogy and the study of the processes of teaching and learning.

Pedagogy: This term generally refers to the study of teaching and learning processes, more especially amongst the young – and can be contrasted with andragogy which is the study of adult learning.

Peer: Literally, someone with similar levels of subject expertise, and institutional seniority. However, the term usually refers to an external expert, often acting in the role of assessor or inspector of standards. Hence a peer is a member of a evaluation tem undertaking (say) and institutional visit, but who has no personal or professional connection with the institution being inspected.

Peer Assessment: An assessment strategy in which learners assess each other's performance in respect to the achievement of an assessment task, either alone or (more usually) in groups the work of their peers. Such assessments are normally criterion rather than norm referenced, with the criteria being previously established by the tutor, either alone, or with collaboration from the group of learners.

Peer Feedback: This refers to all forms of comments, congratulations, criticisms, judgments, reactions, responses, etc., from fellow learners within a group on the work of another member of the group. This feedback many be general, or judgmental, quantitative or qualitative. (See also Peer Assessment).

Peer Review: (1) Within higher education, with reference to an individual, this refers to the process of reviewing the overall performance of a member of staff, for example in order to assess their fitness for a tenured position, or the assessment of a piece of their work, for example to be published in a peer reviewed academic journal.
(2) With reference to a higher educational institution, this refers to the external review and evaluation of the quality and effectiveness of the institution's overall performance, or any aspect of it (such as teaching or research), which is carried out by a team of external evaluators who are experts in the areas under consideration

and possess long experience of the running And management of higher education institutions. In the U.K. universities are subject to various peer review processes including Institutional Visits, (which assess overall performance), Teaching Quality Assessment (which assesses teaching excellence in specific subjects) and the Research Assessment Exercise (which periodically assesses the quality of research). Peer reviews may be based on standards set by the national accrediting organizations or on quality standards established more broadly with reference to (say) a subject area, or a combination of both (as in the example of the U.K. T.Q.A. process.)

Peer To Peer Network: A computer network configuration where users store their files and information on their own computers, but anyone on the network is able to access the files stored on the other networked computers of other users.

Performance: In the context of higher education, this refers to the part of a learning objective which states what a learner should be able to do as an outcome of a learning process or activity. (See also Learning Outcomes).

Performance Analysis: The process of analysing the performance of an institution or organisation in order to identify (and thereby solve) any existing performance problems.

Performance Assessments: In the context of education, this term refers to the assessment of higher-order knowledge and professional skills in the real-world, work based, context in which they are actually used, generally by means of complex and open-ended assessment tasks, which may or may not be time constrained, depending on the work context to which they relate. (See also On the Job Assessment and Performance Assessment)

Performance Indicators: (1) With reference to computer hardware, software, systems or networks, these refer to measures for assessing the quantitative performance.
(2) With reference to educational processes, this term refers to qualitative and quantitative measures descriptors used for assessing comparative performance, with reference either to changes in performance over time or to competitors, e.g., the number of students who enroll on a course, the percentage of learners who successfully complete an assessment task.
(3) With reference to educational institutions, performance indicators (also known as management indicators) are measures, usually numeric, of the state of, or outcome from, an education organization, its programs, or processes. For example all U.K. universities have to complete an annual return of set performance indicators including data such as undergraduate and post graduate admission and completion rates, research records, first employment destination statistics for graduates, cost per student, student/staff ratios, etc. The provision of such information is important to publicly funded institutions wishing to secure continued finance, and also as a demonstration of public accountability.

Performance Objective: Within the context of higher education, this is a detailed description of what learners will be able to do once they have completed a unit of instruction. (See also Learning Outcomes)

Performance Support Systems: Specialist computer software program that help the learner in undertaking a task, and the additional resources made available to support the learner. Examples of support systems include standard user help features provided with computer systems, and learning advisors trained to provide aid and support to learners, and contactable by phone and/or email.

Performance Technology: A term used to describe instructional technology, but which also utilises the inclusion of non-instructional solutions to performance problems.

Performance Testing: The holistic testing of fully fledged performance usually against specified professional criteria, in the real-world, work based, context in which they are actually used, as opposed to the assessment of isolated knowledge, skills or attitudes which may underlie full performance. (See also On the Job Assessment and Performance Assessment)

Peripheral: A physical device that is attached to a computer central processing unit, such as a CD-ROM, external drive, keyboard, modem, mouse, printer, scanner, speakers, visual display unit, web cam, etc. (See also Hardware and Input Devices)

Personalization: The practice of tailoring learning programmes (learning materials, mode of delivery, assessments, etc.) specifically in accordance with the learner's background, learning style, previous knowledge, etc.

Physical Security: With reference to computing hardware, these are measures taken to prevent theft, vandalism, and other types of harm to the equipment.

Pilot: (See Field Trials)

Platform Independent: When used in connection with technology enabled learning, platform independence refers to software products that will operate on, or can be accessed from, a variety of different types of computers (e.g. either Mac or Microsoft environments). Platform independence is now routinely obtained by using a standard web browser (Netscape or Internet Explorer) for access.

Platform: Refers to the computer hardware and operating system software configuration which is used to run application software.

PnP: Acronym for Plug'n'Play.

Point of Presence/Post Office Protocol (POP): A protocol used by electronic mail client programs for receiving e-mail from e-mail servers.

Portable Document Format (PDF): A standard for formatting documents which was developed by the Adobe Corporation. Documents that have been stored in PDF format require Adobe Acrobat Viewer for viewing and printing.

Portal: (1) A generic term used to refer to a Web site that acts as a "gateway" to a part of the Internet, or part of an Intranet, in which specific products and services are made available by a provider to users,
(2) In e-learning, a specific view into a set of applications that matches a person's role and requirements to the available services and learning offerings

Portfolio Assessment: Often used in connection with accreditation of prior experiencial learning and assessment in specific areas of the graphic arts (e.g. design, photography), a portfolio is a collection of personal work compiled by a learner which describes and provides examples of the learner's efforts, progress and achievements in a given area and provides evidence for them. Typically the process of creating a portfolio would include 1) learner participation in the choice of portfolio content, 2) the criteria for selection, 3) the criteria for judging merit, and 4) evidence of learner self-reflection. Hence portfolio assessments, more so than other methods of performance assessment, require on the learner to be involved in planning the entries, choosing what to include, and providing the rationale behind those decisions. Hence the assessment of portfolios tries not only to assess the portfolios themselves, but also to some degree the process of their creation and production.

Post Tests: Tests that are given to learners after they complete a learning experience or activity, to assess what they have learned; can be contrasted with pre-tests given before the learning process starts. (See also Pre Tests)

Practicals: An approach to "learning by doing" which seeks to provide learners with a "hands-on" opportunity to develop knowledge and practice skills, and which is utilised primarily in the pure and applied sciences and medicine. The learners use equipment to undertake a prescribed task, with the tutor present, observing what they are doing and responding to queries as required. These could vary from simply answering questions to actually showing the learner how to use the equipment in order to achieve the desired result.

Pre Active Teaching Workload: Workload associated with program design and teacher preparation which needs to be undertaken prior to the commencement of a course or programme.

Pre Service Teacher Education: Initial teacher education and the preparation of individuals, prior to their being certified and becoming practising teachers in schools. In the U.K. context this would include the Post Graduate Certificate of Education (PGCE)

Pre Tests: Tests that are given to learners before they begin a learning experience or activity and which serve two purposes. First, to check that the learner has the necessary prior knowledge, skills and attitudes to undertake the learning experience. Second to compare the results obtained with those obtained in subsequent post-tests, so as to establish how much the learner has learned; can be contrasted with post-tests given after the learning process starts. (See also Post Tests)

Predictive Technology: Intelligent technological resources that gather user data and thereby learn as they are being used, and which, therefore, can provide information "just in time" by anticipating the needs of each subsequent user on the basis of the behavior of previous users.

Presenting Information: This term refers to the process of formatting, displaying, or showing learning materials over the World Wide Web.

Printer: (1) Used in the context of computing equipment to describe a peripheral device that is connected to a computer or computer network from which it receives digital signals and translates these into words and images on to paper in black and white or colour. Printer types include dot matrix, fax, ink jet, laser, and pen and ink devices as well as specialist devices like Braille printers, which are used by blind students. (See also Hardware and Peripheral)
(2) The person who manages and directs the physical reproduction of distance learning materials available in print format, including the collating, binding and packaging processes.

Prior Learning Assessment: The process of identifying, documenting, assessing and providing recognition for accredited and non-accredited learning acquired through both formal study and informally through work experience. (See also Accreditation of Prior Learning).

Problem Based Learning: This refers to a method of learning in which a problem situation serves as the central focus for all learning activities and as the stimulus and focus for student activity. The rationale for this approach is to assist learners in the acquisition of knowledge and skills by addressing a staged sequence of authentic problems presented in context, together with associated learning materials and support from tutors. In problem based learning the curriculum is developed by utilising a series of real life authentic problems as the core organising structure. Hence problem based learning is not just the addition of problem solving activities to otherwise subject-centred curricula, but a learning philosophy in which the curriculum is centred on key problems in professional practice. Hence the design of problem based learning courses starts with identifying the problems that are relevant to learner competence and professional practice rather than the subject knowledge

Problem Solving: (1) Generally refers to the learned capability of selecting and applying multiple rule sets in a discrete order and pattern, in order to solve problems.
(2) When used in the context of problem based learning, this refers to the creative application of various principles, procedures, rules, and techniques to solve complex problems where there is no single correct answer. (See also Problem Based Learning).

Process Costing: A costing methodology in which expenditures are accumulated into the costs of production and allocated to elements of the final product, often used in the costing of the productions of open and distance learning materials.

Product Evaluation: Used in reference to technology enabled learning, this refers to the assessment of the utility of instructional materials in their original context and also their potential use in other educational settings.

Production: When used within the context of open and distance learning, this refers to the overall process of taking a manuscript and managing it through all production stages to printed, finished copies, available for distribution.

Professional Practice: This refers to engagement in all activities that are consistent with, and congruent to a particular profession (as in, for example, medical practice).

Profile: Within higher education, the term student profile refers to a specific, subject related field of learning leading to an accredited award. (Europe and U.K.)

Programme: A particular sequence of learning activities which a learner may use to achieve specific learning outcomes, and which normally leads to an accredited award. (Europe and U.K.)

Programme Officer: (1) Member of academic staff with official responsibility for the management and delivery of a programme of study.
(2) A senior manager within an evaluation or accreditation agency responsible for coordinating, assisting, and carrying out the administration of evaluation or accreditation procedures.

Progress Tracking: The facility for both tutors and learners to assess the progress of learners by checking marks and grades on assessment tasks (e.g. assignments and examinations), usually via accessing a Learning Management System via a computer network. (See also Learning Management System)

Project Based Learning: This refers to a method of learning in which a specific project serves as the central focus for all learning activities and as the stimulus and focus for student activity. The rationale for this approach is to assist learners (either singly or in groups) in the acquisition of knowledge and skills by completing a specific subject or practice based project. In project based learning each learner (or more usually group of learners) group is assigned a project by a tutor, or (more frequently) chooses a project after consultation with the tutor. Quite frequently, the project will be based on real life, or may be work related. Where the project is undertaken by a group, they collaborate to design and complete the project, detailing their basic goals and objectives, agreeing work roles, timelines, etc. Within group project, not only is the success of the group in completing the project assessed, but the way and manner in which they worked collaboratively may also be part of the assessment process.

Project Costing: A method of costing used for assessing the cost of a one-off activity, which may be a research project, or the production of learning materials, when the latter occurs not via the usual continuous manufacturing process, but through a series of bespoke and special order contracts.

Project Management Software: Specialist software programs that provide tools to help manage projects, which include integrated calendars, Gantt charts, report generators, task scheduling, progress charting, tracking, prioritizing, etc. The most commonly used is probably Microsoft Project.

Project Supervision: Within the context of higher education this refers to the process whereby learners (either singly or in groups) are provided with tutorial support as they carry out projects which are designed to give them the opportunity to apply the knowledge and skills acquired throughout the course. Each learner meets regularly with his/her supervising tutor to discuss their project ideas, and throughout the project, the learners provide their tutors with material for comments, and the tutors provide feedback and meet with learners meet to discuss feedback and progress on the project.

PROMETEUS: (See PROmoting Multimedia access to Education and Training in EUropean Society)

PROmoting Multimedia access to Education and Training in EUropean Society (PROMETEUS): PROMETEUS is an open consortium launched in March 1999 under the sponsorship of the European Commission which comments on specifications and standards and offers networking support with the aim of building a common approach to the production and provision of e-learning technologies and content in Europe. (See at www.prometeus.org)

Protocol: When used in connection with educational technology, this refers to a formal set of industry standard rules and software procedures which enable different types of networked computers and software programs to communicate with each other and share and transfer data.

Psychomotor Domain: A term used in educational science to refer to the domain of learning activities that deal with the acquisition of physical and/or motor skills; normally associated with vocational training.

Psychomotor Skills: Skills related to human movement and action as demonstrated by coordinated muscular movements that are typified by smoothness and precise timing in undertaking specific activities (e.g. kicking or catching a ball).

QA: (See Quality Assurance)

QCA: Acronym for Qualifications and Curriculum Authority (U.K.)

QCIF: (See Quarter Common Interchange Format)

QTI: (See IMS Question & Test Interoperability)

Qualification: The certificate for any credit rated award (degree, diploma or other) issued by a accredited authority which demonstrates recognition of the successful completion by a leaner of a recognised programme of study.

Quality: Generally refers to "fitness for purpose for," or conformity to, a generally accepted set of required industrial and/or user standards, as defined by an accrediting or quality assurance body, in respect to a product or service**.**

Quality Assessment: Also known as Quality Review. Used in higher education, this refers to a diagnostic review and evaluation of the effectiveness and excellence of all or part of an institution's activities, including teaching, learning, and research, based on a detailed examination of programme structure and curricula, student feedback, physical facilities (e.g. libraries and computer centres) undertaken by an external accrediting agency or national body. Quality assessments are designed to determine if an institution and or some or all of its programmes meets generally accepted threshold standards of excellence. Failure to pass an assessment can lead to the removal of the ability to make awards. (U.K.)

Quality Assurance (QA): When used in the context of higher education , this refers to the planned and systematic review process of an institution or program to determine that preset standards of education, scholarship, and infrastructure are being maintained and enhanced. The totality of the managerial processes and protocols by which an educational institution discharges its responsibility for the quality of the teaching it offers, satisfying itself (and external evaluators) that the mechanisms in place for quality control are effective and promote continual improvement. In the U.K., under the system of institutional review by the national Quality Assurance Agency for Higher Education, the means by which a higher education institution confirms that the conditions are in place for students to achieve the standards set by the institution or other awarding body.

Quality Audit: When used in the context of higher education, this refers to the evaluation of an institution's processes and systems for quality assurance and control system, through a periodic self-evaluation mechanism and external review of all aspects of its activities, performance, physical infrastructure and human resources. Quality Audits are designed to provide an assessment of an institution's system of accountability, internal review mechanisms, and effectiveness, for internal uses and, more usually, for external bodies with the power and responsibility of confirming that the institution's quality assurance process is in compliance with nationally agreed standards

Quality Commission/Committee: Also known as an evaluation team, expert committee, peer review team, review team or visiting team. When used in higher education, this refers to a body of experts chosen by a national agency or government department or a group of higher education institutions, for a specified term to assess the quality of institutions(in total and also their discrete areas of activity) and frequently also to state its opinion on matters concerning higher education policy and practices. Such Committees are almost always on-going, but may be set up just to deal with a particular task.

Quality Control: When applied to higher education, this refers to managerial and supervisory measures regularly undertaken to assure the quality of a teaching unit, degree programme, with the emphasis on assuring that a prescribed national or institutional threshold of quality is met.

Quality Improvement: Generally, this refers to all the actions taken throughout an organization to increase the effectiveness and efficiency of its activities and processes in order to provide additional benefits to both the organization and its clients. The term also covers the expectation that an institution will have a plan to monitor and improve the quality of its processes and products. In the case of higher education, the national quality assurance and accrediting agencies require that established procedures are in place to ensure that quality improvement is an ongoing process.

Quality Management (QM): An institutional commitment to organising work which:
ensures that the institution's vision and mission are clear and known to everyone;
ensures that the systems through which work will be carried out are well thought out, foolproof and communicated to everyone;
ensures that everyone's work roles and responsibilities are clear and understood;
defines and documents the institution's definitions of, and aspirations for, 'quality';
sets in place operating and reporting systems to ensure that everything is working to plan;
and puts in place agreed procedures of addressing problems when they arise**.**

Quality Review: See Quality Assessment.

Quantitative Analysis: The mathematical and statistical processes which enable identification of the discrete components of some phenomena and the relationships that obtain between them, emphasising entities that can be counted or measured. Typical quantitative analytical techniques include multiple regression analysis, ANOVA, etc.

Quarter Common Interchange Format (QCIF): Industrial standard format of 176 x 144 pixels which enables that screens of information to be displayed on any system which is QCIF compliant.

QUILT: Acronym for Quality in Information and Learning Technologies.

RAM: (See Random Access Memory)

Random Access Memory (RAM): The area on the hard drive of a computer on which information is temporarily stored while the computer is on and performing programming functions.

Rapid Prototyping: A term used in the a design process, which refers to the early development of a small-scale prototype which is then used to test out key features of the design, before the prototype is scaled up for full production.

Read Only Memory (ROM): The area on the hard drive of a computer on which memory is stored permanently that is read and not altered while the computer is on and performing programming functions.

Real Time: When used with reference to computer systems, a real-time system controls an environment by receiving data, processing it, and returning the results sufficiently fast to be able to affect the on-going functioning of the environment at that time.

Reciprocity: When used in connection with higher education, this refers to a system adopted by accrediting bodies which enables them acknowledge each other's accreditation or certification decisions, even though the criteria may not be identical. Recognition is based on the assumption of equivalence of qualification levels, standards and quality.

Recognised Bodies: A list of universities and other institutions with power to award degrees, see for example www.dfee.gov.uk/info/univer (U.K.).

Recognition: (1) Process whereby the credits achieved by a learner through the successful completion of course units or modules as described in the Learning Agreement at the host university is attributed an equivalent number of credits at the same level within his/her home institution. (Europe and U.K.)
(2) The formal acknowledgment that an accrediting institution meets or surpasses standards set by the organisation conducting the recognition review. (U.S.A.)

Recognition Of Learning: Any process which acknowledges and establishes publicly that an element of learning has taken place and has been accurately assessed to have taken place.

Recurrent Costs: The ongoing costs of repetitive activities s that recur year after year (or accounting period after accounting period).

Reference Points: Non-prescriptive guidance indicators that are formulated as learning outcomes, and thereby expressed in terms of competences, which support the articulation of qualifications, such as degree programmes. (Europe and U.K.)

Regional Accreditors: Agencies and bodies which can accredit the teaching programmes of public and private, nonprofit and for-profit, two- and four-year institutions in a specific geographic area. (See also national accreditors as well as specialized and professional accreditors) (U.S.A.)

Regional Centres: See Learning Centres.

Registering: The process of formal entry into a programme of learning, which may be done physically or via on-line registration and/or linkage with existing registration systems.

Reliability: Term used in education to refer to the extent to which an assessment strategy or activity would yields similar results in similar circumstances. A reliable assessment task is one which would give the same or similar results if administered to the same student cohort under similar examination conditions.

Remote Access Tools: Specialist computer software which enables the user to access, and work with, computer systems at a distance, and from one than one machine, as necessary.

Resit Examination (Exam) or Assessment: Students who have not been able to take or successfully complete an assessment task, such as an examination, on the first date scheduled may be offered the opportunity to take a resit the assessment task or examination at a later date, usually without penalty or loss of grade.

Resolution: The clarity of the images produced on a visual display unit or video screen. (See also Quarter Common Interchange Format).

Resource Monitoring: When used in connection with computing, this refers to the facility to display detailed information, such as the disk space and CPU resources devoted to an application, while that application is running.

Reusable Learning Objects (RLOs): The building blocks of a personalized learning experience. Widely accepted as the future of distance learning, these are the smallest 'chunk' of learning resource that can be re-used in multiple learning contexts. Used in conjunction with a learning profile, RLOs, or oblets, can be assembled to deliver a tailored set of learning outcomes specifically designed for each learner. RLOs are individual objects, each with their own identity, type, size, and complexity, that can be entered into a database or knowledge repository utilizing metadata descriptions (from IMS, SCORM, Dublin Core, or IEEE). Each object can consist of the lowest logical file level, such as text, a graphic, a test question, or a Java applet, and each has its own ownership and assigned value. RLOs can also be assemblies of other components. A complete on-line course, with text, graphics and streaming videos, can be an assembly, but still treated as a single learning object. Each of these composite objects has an ownership for the composition, even though the individual subassemblies may be the property of others.

Review Team: (See Quality Commission)

RGB: Acronym for Red, Green, Blue (colour monitor guns) The primary colours that mixed on a television and computer visual display unit.

RLOs: (See Reusable Learning Objects)

RMI: Acronym for Remote Method Invocation (Java)

Role Playing: A structured learning activity in which groups of learners, sometimes with the aid of computers, each act out a particular roles to explore a particular learning task or activity or analyse a particular real or imaginary problem. For example, one member of the group could act out the role of President, another could be a Minister or a civil servant as part of a simulation of governmental policy making, etc. (see also Online Role Playing)

Roll About Video Conference System: An all in one, user friendly video-conferencing system, whose major advantage is that it requires a minimum of technical expertise to use.

ROM: (See Read Only Memory)

Router: A computer hardware device, with attendant software, which regulates network traffic as it moves from one network to another, and ensures that the data goes to the correct network site.

Runtime Only: Term used in educational technology to refer to a version of learning software, developed with authoring software, that allows the program to be only run by a user, and not changed or altered by the user.

Satellite Feed: Broadcast material (for example, a video conference) that is sent and delivered to users via a geostationary satellite.

Scaffolded Learning: This refers to supporting learners in their learning, and gradually withdrawing that support as they become more adept and proficient at learning.

Scaffolding: An approach to learning in which the tutor enables the learners to undertake cognitive apprenticeships, by providing them with cognitive processing support when needed and requested by the learners and, as necessary, performs parts of a task that the learner is as yet unable to perform, thereby enabling learners to learn complex concepts, which would have been beyond their intellectual faculties if they had depended solely on their own cognitive resources, and did not have the support of the tutor.

Scalability: Term used in both computing and production which refers to whether, how much, and with what ease, the production of an artifact can be increased or the use of a computer system can be expanded, without failing or significant loss in quality, production standards or user satisfaction.

Scaleable Systems: Computer software systems that can be greatly expanded to support much larger numbers of users, without failure or loss of service quality.

Scaling Marks: An arithmetical technique, used in the calculation and derivation of students' grades from two or more sets of scores. The assumption behind this method is that the variation of scores obtained by the same group of students undertaking assessment tasks should be similar. Hence, for example, in calculating a final unit mark for students, three sets of assessment scores may be arithmetically combined from three different assessment tasks that are supposed to carry the same weight within the final mark. However, if the spread of scores obtained for one of the tasks is much greater that the spread of scores obtained for the other two, then these scores will have a disproportionate impact on the final grading of the students. To avoid this distortion, and ensure that all three sets of scores carry equal weight within the final grade, each set of scores should be 'scaled' or adjusted to fit within the same range of scores. Such a method assumes that the range of scores will (or should) follow a normal distribution, and hence should only be employed when the student cohort in question is greater than circa 30. Below this number, it is not correct to assume that distribution of scores follows a normal distribution.

Schools Interoperability Framework (SIF): An open consortium which is a division of the Software & Information Industry Association creating an XML specification for managing and sharing data for K-12. as an open industry standard. (See at www.siia.net/sif/about.htm)

Score Distributions: The pattern of scores achieved by students following an assessment activity. Score distributions are usually analysed with reference to set ranges (e.g., the semi-inter quartile range) or percentile groups, derived by reference to the normal distribution.

SCORM: (See Sharable Content Object Reference Model).

SCP: Acronym for Service Control Protocol (UPnP)

SCPD: Acronym for Service Control Protocol Declaration (UPnP)

Screen Design: The design of the appearance of individual screens in a multimedia or computer-based training program.

SCSL: Acronym for Sun Community Source Licence.

Search Engine: A tool used to search the Internet for information. A word or phrase is entered on a search engine which then searches defined database and a number of "hits", i.e. urls to documents containing the word or phrase, appear . By clicking on the urls, the user is brought to that particular web page containing the word or phrase. Different search engines use different search strategies – the most commonly used search engine is Google.com

Searching: When use in reference to online learning materials this refers to the ability to locate parts of the course materials on the basis of word matching beyond the user's current browser page.

Second Cycle Degree: A second cycle degree is a higher education qualification awarded after the successful completion of second cycle studies and may involve some research work. Typically Masters degrees are second cycle qualifications which are taken by a student normally after completion of a first cycle degree. (Europe and U.K.)

Security: Protection from threats to the equipment, functioning and contents of a technology solution.

Security Tools: When used in respect to technology enabled learning, these tools are used to prevent unauthorised access to websites and programs and/or modification of data. Security tools can include a wide range of approaches and methods.

Self Assessing: Used in e-learning to refer to practice quizzes and other survey style assessment tools that may or may not be scored on-line.

Self Assessment Question (SAQ): An opportunity that enables the learner to prepare for a learning experience; tests his understanding of a particular point; and enables dialogue with the course writer.

Self Assessment: (1) An assessment strategy in which the student assesses his or her own work, preferably with reference to criteria set by the teacher and/or the student group, or the individual student.
(2) An internal review by which an organization assesses its own processes and performance against given criteria such as those described in best-practice documents, for example the Australian Business Excellence Framework.
(3) This refers to attempts at ascertaining learning achievement by oneself, usually with the help of automated marking schemes and feedback.

Self Contained: A course that contains all the subject material as well as the features of self instructional courses. Production of a self-contained course would require the inclusion of everything that would be in a subject textbook as well as all the activities that would transform it into a tutorial in print.

Self Evaluation: With reference to a higher education institution, this is the same as internal evaluation, done by a unit as a form of quality management or in preparation for external evaluation.

Self Help Group: In the educational context. a group of learners who came together voluntarily to plan and implement a learning programme. Their objectives may be preset (e.g., a syllabus) or formulated by the learners themselves.

Self Instruction: A learning technique in which learners are taken step-by-step through an instructional process; self-assessment exercises are a central feature and instruction can be paper-based or computer-based.

Self Paced Learning: (1) A method of teaching which allows learners to work through the course material and other tasks and activities at their own pace. Self paced learning is often opposed to 'lock-step' learning in which all learners cover the same material and attempt exercises at the same time.
(2) In e-learning, an offering where the learner determines the pace and timing of content delivery so that the learner proceeds through a course of study or an activity at his or her own rate and schedule without regard for the learning of others, usually without interaction with others, and usually without an instructor or facilitator. Sometimes used to refer to asynchronous modes of delivery. CBT has been the most common form of self-paced learning, but web-based asynchronous systems are catching up quickly.

Self Study: Used in the context of higher education institutions to describe the review and evaluation of the quality and effectiveness of an institution's own academic programs, staffing, and structure, based on standards set by an outside quality assurance body, but carried out by the institution itself. Self-studies result in an internal

self-study report and are usually are undertaken in preparation for a quality assurance site visit by an outside team of specialists.

SGML: (See Standard Generalized Mark-up Language)

Sharable Content Object Reference Model (SCORM): The U.S. Federal government's reference model for the use of learning content standards and specifications. SCORM is built on the work of AICC, IMS, and IEEE and is the ADL's most widely known initiative. SCORM is a reference model for standardizing the interoperability, accessibility and reusability of e-learning systems and Web-based learning content. Version 1 focuses on two critical pieces of learning content interoperability: (1) It defines a model for packaging learning content. (2) It defines an API for enabling communications between learning content and the system that delivers it. SCORM also divides the world of learning technology into functional components. The key components are: Learning Management Systems (LMS) and Sharable Content Objects (SCOs). The advantage of SCORM is that SCORM content can communicate learner information with any LMS using a standardized method based on JavaScript. The SCORM specification (which derives from work done by the Aviation Industry CBT Committee, or AICC) lays out exactly what pieces of learner information can be retrieved and updated. This information includes the learner's name, the learner's ID, scores on quizzes, time spent in a learning object, and the learner's physical device preferences. This is a simple implementation that covers the basic requirements for communicating learner information.

Sharable Content Objects (SCOs): A standardized form of reusable learning object. SCOs are self-contained units of learning. They can be used as building blocks to create packages of objects, but they cannot be broken down into smaller units. Three things must be done to create a larger unit of learning from objects:
1. The objects must be found and organized into a structure;
2. Instructions must be written that tell an LMS which object comes after which;
3. The objects and instructions must be bundled into a portable package.
This process is called content aggregation. Note that content aggregation includes instructions for moving between objects but not for movement within individual objects.

SIF: (See Schools Interoperability Framework)

SIIA: Acronym for Software and Information Industry Association

Simple Mail Transfer Protocol (SMTP): The protocol used by electronic mail servers to exchange e-mail with other e-mail servers and by some client mail software to send e-mail to an e-mail server.

Simulation: A simulation is a simulated real life scenario displayed on the computer, which the student has to act upon. Hence simulation refers to the articulation of real-life scenarios, processes, and objects with artificial forms, representations and models of the same.

Simulations: Software programmes that enable "learning by doing" by allowing learners to experience a realistic reproduction of an actual situation but in virtual format, and which require the learner to make specific decisions on how to proceed and undertake particular actions in order to accomplish a given task and then receives feedback on the validity of the decisions. Online simulations allow learners to construct knowledge and use metacognitive strategies and allow performance-based assessment. Simulations can take many forms, from sophisticated aircraft simulators to management development exercises which allow participants to evaluate their decision-making capabilities, and often involve very complex programming and specific hardware (handsets) and software. Computer-based simulations often substitute for situations that are very costly or high risk and where there is an aspect of safety involved, and it would be too dangerous (and the mistakes too expensive) to try for real – such as teaching pilots to fly passenger jet airliners

Single Mode Institution: An institution that offers either only campus based courses or has been set up solely to offer programmes of study at a distance.

Site Visit: Evaluation by a team of peer reviewers who examine the institution's self-study; interview faculty, students, and staff; and examine the structure and effectiveness of the institution and its academic programs. Site visits usually result in an evaluation and are normally part of the accreditation process, but may be initiated by the institution itself. (See also peer review)

Site: These are related pages on a Web server. A site is entered through a home page.

Situated Learning: This refers to an approach to learning that emphasises the importance of physical and/or social context and in which the situation serves as the focus and anchor of all learning activities.

Skills Gap: The gap between what people know and what they need to know, in order to remain in employment, and which has occurred as the result of new information and communications technologies which means that knowledge is expanding at an ever faster rate and so people need to update their skills constantly, through lifelong learning.

Skills: Skills are abilities formed in learning activities designed to develop competences and which can be divided into “subject specific” and “generic”. (Europe and U.K.)

Sloan-C: The Sloan Consortium (Sloan-C) was founded with funding from the Alfred P. Sloan Foundation and encourages the collaborative sharing of knowledge and effective practices to improve e-learning provision.

SLP: Acronym for Service Location Protocol.

Smart Card: A small plastic card containing information that can be read by a computer scanning device.

SMEs: Acronym for small and medium enterprises.

SMTP: (See Simple Mail Transfer Protocol)

SOAP: Acronym for Simple Object Access Protocol

Social Presence: This refers to evidence of individual being, distinctiveness and personal existence in communal or group-based settings. In the context of electronic conferencing environments, for instance, social presence refers to the individual character of participants which is manifest via (inter alia) the use of emoticons and other textual means.

Socrates: European Action Programme in the Field of Education.

Software Features: The capabilities offered by computer software which meet the user’s needs and make it easy and effective to use.

Software: Instructions, procedures and programs in the form of digital code which is stored on magnetic disks or tapes or as electronic information in the memory of a computer, and which determines what functions and tasks are undertaken by the computer. Usually software is divided into two distinct groups, operating system software and application software.

SPC: Acronym for Student Portable Computer.

Specialized and Professional Accreditors: (1) Accredit specific programs or schools, such as law schools, medical schools, engineering schools, and health profession programs. (U.S.A.) (See also national accreditors and regional accreditors.)
(2) Professional and statutory bodies that approve or recognise specific programs (e.g., law, medicine, engineering, health professions, architecture) in the context of the requirements for professional qualification. Some such organizations have a prescribed statutory responsibility to approve or recognise programs and/or determine the academic standards and professional and vocational components of such programs. (U.K.)

Specific Credit: That part of a student's general credit judged to be relevant to a particular award and its component units. (Europe and U.K.)

Specific General Credit: That part of a student's general credit which may be set against non-compulsory (optional) units of a course (Europe and U.K.)

Spoon Feeding Problem: The dilemma in education and training between how much to simplify and control the learning situation, versus how much to allow the learner to explore real-world complexity.

SSDP: Simple Service Discovery Protocol (UPnP)

Staff: In the context of higher education evaluation and accreditation procedures, this refers to employees of an evaluation or accreditation agency coordinating, assisting, and carrying out the administration of evaluation or accreditation procedures. Staff may consist of programme officers with coordinating and assistance functions and of office assistants or administrators with secretarial functions.

Stakeholders: Generally used to refer to groups and/or individuals who have a significant interest in the successful outcome of some initiative, provision or activity. In the case of an educational institution, stakeholders can include existing and potential learners students (and their parents), national and state government funding agencies, the staff of the institution, companies employing graduates and society at large.

Standard Generalized Mark-up Language (SGML): A generic language for formatting documents.

Standards: (1) In the institutional context these refer to the level of requirements and conditions that must be met by institutions or programs to be accredited or certified by a quality assurance or accrediting agency. These conditions involve expectations about quality assurance, attainment, effectiveness, financial viability, outcomes, and sustainability.
(2) In the context of e-learning this refers to the parts of a learning objective that describe how well the learner will be expected to perform, expressed in terms of accuracy, speed or quality, and also specifications covering learner profiles, course sequencing, course interchanges, learning object metadata, etc. such as those from the IEEE Learning Technology Standards Committee (LTSC)

Steering Committee: A group of persons who meet periodically to evaluate the progress and success of the implementation of an organisation process or project Steering Committee are tasked with overall scrutiny, rather than day to day management issues.

Stepped Fixed Cost: A cost that varies with the level of activity, but only has a number of possible values, each of which applies over a relevant range. Hence, for example, the cost per student on a course may be fixed, as it is not possible to educate half a student.

Streaming: Playing video or sound in real time as it is downloaded from a computer network, typically an Intranet or the Internet, and viewed on a local computer. The data is decompressed and played (by use of a web browser plug-in) as it is transferred to he local computer over the World Wide Web. However as the images and audio files are not typically stored into the computer's hard drive, streaming requires a powerful computer and high speed network connectivity.

Student Centered Learning: This is an educational philosophy, which considers the students, their needs, and circumstances at the center of a active learning process. Often at the heart of open and distance learning, student centred learning can be contrasted with the normal didactic process of teaching by oral delivery which occurs in higher education, which is, in essence, one way and passive.

Student Presentations: An educational technique, often used as part of the assessment process, in which learners are asked to present their work to other learners, either face to face or via e-mail, computer conferences, web-pages, etc. Feedback from other students is encouraged, as part of the process of reflection on the student's work and learning progression.

Student Support: Generic term which refers to all forms of assistance that is provided to learners to support their learning, and may take the form of written or online materials and face to face or computer mediated communication with a learning advisor, counsellor, help desk, mentor, tutor, etc.

Student Support Tools: Used in connect with technology enabled learning to refer to include facilities to enable an help desk operator, learning advisor, etc., to respond to requests for help by student users of a particular computer application, or learning experience or activity.

Student Tools: Used in connect with technology enabled learning to refer to applications that cater to the special needs of telelearners.

Student Workload: A quantitative measure of the sum of all student learning activities required for the achievement of learning outcomes within the given timeframe including, inter alia, lectures, seminars, practical work, information retrieval, self directed study, independent research, and examinations. (See also Learning Time) (Europe and U.K.)

Study Guides: First developed by the U.K. Open University, study guides are used in open and distance learning and are printed learning materials that are used in conjunction with supportive collections of articles, textbooks, audio cassettes, video cassettes and broadcast programmes. Study guides are more substantial than handbooks but less labour intensive than interactive textbooks; they are probably the most commonly produced print materials for course packages in distance education.

Study Programme: A coherent set of course units or modules, established in relation to a subject or discipline, which are compiled by a higher education institution. Successful achievement of the learning outcomes underpinning the study programme forms the basis for the granting, to the learner, of a specified number of credits and a specific degree award.

Study Skill Building: Facilities and programmes that support effective study practices, which can range from simple review tools, through optional mini courses in how to study to compulsory generic “learning to learn” core curricula which are written in to a degree programme.

Subject Benchmark/Subject Benchmark Statements: Subject benchmarks provide a reference point against which outcomes can be measured. Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject. They also represent general expectations about the standards (levels of student attainment) for the award of qualifications at a given level in a particular subject area and articulate the attributes and capabilities that those possessing such qualifications should be able to demonstrate. Normally used within tertiary education, but also possible for other educational levels. They are usually reference points in a quality assurance framework, rather than prescriptive statements about curricula. (Europe and U.K.)

Subject Matter Expert (SME): An individual who is recognized as having proficient knowledge about a subject area. Usually considered as a source of content, in the e-learning context.

Subject/Unit Outline: A description of the subject or unit, usually containing**:**
1. The objectives or learning outcomes for the subject or unit;
2. An outline of the content; details of assessment tasks and how they relate to the objectives or learning outcomes;
3. Set texts and other suggested readings; and
4. Other information about the subject or unit.

Subjective Assessment: Evaluation designed to include the learner’s own thoughts, feelings and experiences, and ability to express them, rather than just rely on the demonstration of factual knowledge alone.

Substantial Equivalency: Certification of a non-U.S. program based on a finding that it is, in all essential respects, the equivalent of similar programs in the United States and meets accepted quality standards. Substantial Equivalency is used in situations in which reciprocity agreements are not in place. (U.S.A.)

Suite: A collection of related software programs that are sold together because they are supposed to both work together efficiently and use similar commands.

Summative Assessment: (1) Assessment used to gain a view (or summation) of the student learning outcomes achieved in a subject, unit or course. Used to refer to any assessment whether graded or ungraded, which contributes to the overall assessment of a student's actual learning achievements.
(2) This refers to the measurement of learning achievement that takes place on completion of the learning activity or activities, at the end of the educational process, as an indicator of students' final achievement in the course or program.

Summative Evaluation: Generally refers to evaluation which is undertaken by collecting, analyzing, and summarizing data for the purpose of providing information to decision makers in a client organization in relation to the use, worth and impacts of some object, program, or process in relation to its intended outcomes, and which provides a summary account of its effectiveness and the extent to which it met its goals and objectives in order to ascertain its success and total impacts. A summative evaluation may be undertaken in order to satisfy the requirements of a funding authority, or to provide information that may be useful in later projects.

Support Tools (Instructor): Used within technology enabled learning, this term refers to facilities primarily intended for use by instructors, markers and course designers.

Supporter: The person guiding the learner through his or her course, also known as lecturer, mentor, teacher, trainer, or tutor.

Surface Approach To Learning: A term used within educational science to describe a situation in which a student is motivated extrinsically to focus only on selected topics of information or details of content, which are therefore studied so as to reproduce these details accurately, in an assessment. Hence students adopting a surface approach to learning pay attention to memorise separate bits, elements or components of what they study, on the assumption that these elements will be central to successfully undertaking the assessment task and to follow instructions rather than to understand how the different elements in the study material may inter-relate, or assessing whether the knowledge, in totality, is valid or may be usefully applied. The surface approach to learning can be contrasted with the deep learning approach.

Surfing: The process of exploring and scanning the contents of different websites on the Internet.

Synchronous: Occurring at the same time. In relation to communication, interaction between sender and receiver which takes place simultaneously, e.g. telephone or videoconferencing. In the context of e-learning, synchronous refers to situations in which all participants are connected at the same time. Chats, instant messaging, and web conferencing are forms of synchronous activities.

Synchronous Communication: Real-time communication. Communication that requires the communicating parties to be available at the same time, as with the telephone calls, videoconferencing or face-to-face meetings. This term refers to all forms of simultaneous verbal and non-verbal exchanges between and among participants in both contiguous and noncontiguous settings

Synchronous Conferencing: A form of computer conferencing in which participants interact at the same time. Contributions to the conference are posted to a conferencing server which re-transmits them to other participants in the conferences. Participants may be located in any part of the world. The most widely used form of chat system is Internet Relay Chat (IRC)

Synchronous Learning: Learning events and experiences delivered in real time to the learner that can include immediate, two-way communication between participants.

Synchronous Sharing: Real-time simultaneous information exchange.

Synchronous Training: Synchronous training refers to training which allows tutors and learners to interact simultaneously in real time through methods such as live chats, whiteboards or video conferences.

System Architecture: A description of the design and contents of a computer system. If documented, it may include information such as a detailed inventory of current hardware, soft- ware and networking capabilities; a description of long-range plans and priorities for future purchases, and a plan for upgrading and/or replacing dated equipment and software.

System Functions: A list of the specific capabilities a computer system should be able to do, such as system storage and retrieval capabilities, calculation and processing capabilities, reporting and output capabilities, and telecommunications capabilities.

System: Set of interrelated parts, all of which work collaboratively together toward a defined goal.

Systems Approach: (1) An management approach to organising the tasks required to accomplish personal or organisational goals, which sets the conditions for proceeding in an orderly way;
(2) An analytic approach which recognises that all the components of the system are interrelated, so that a change in one component will bring about changes in the others.

T.120: The T.120 recommendations ensure that any two data-conferencing systems can communicate with each other. The recommendations include standards for whiteboards (i.e. sharing graphical images), file transfer and application sharing. (See at www.imtc.org/t120.htm.)

T-1 (Line) Transport: A digital signal that transmits 1.54 megabits/second of data, which is equivalent to 24 (copper) telephone lines. This is a stage of compressed (partial motion) video, which is used for very high quality videoconferencing.

Tacit Knowledge: Knowledge, information and skills possessed by a person that has not been made available to others. Tacit knowledge is the opposite of explicit knowledge.

Target Audience: In the educational context this refers to a group of learners, who share common characteristics, and for whom a particular course has been prepared.

Task: In the educational context, this refers to a goal-directed assessment exercise. If the task is authentic, and based in real life work or professional contexts, it is designed to elicit from learners their application of a broad range of knowledge and skills to solve a complex problem.

Task Analysis: A process used to identify the knowledge and skills required by a learner to complete an assessment task, in order to ensure that the development of this knowledge and skills are included in the learning process.

TCP: Acronym for Transmission Control Protocol.

TDMA: Acronym for Time Division Multiple Access.

Teaching Device: Within the context of technology enabled learning, this term refers to tools designed to assist the teaching process. Four categories of CMC-based teaching devices are normally considered under this term**:** information retrieval systems, electronic mail, bulletin boards, and computer conferencing.

Teaching Functions: The duties for which teachers have responsibility, within the teaching process. These are normally taken to include organizational functions, social functions, intellectual functions, and assessment functions.

Teaching Method: A way of organizing people for education (rather than learning). Teaching methods include one-online, one-to-one, one-to-many, and many-to-many.

Teaching Technique: A method of achieving teaching objectives. Teaching techniques include (inter alia) one-online techniques, one-to-one techniques, one-to-many techniques, and many-to-many techniques.

Teaching Workload: The amount of time spent by an individual on teaching functions. The teaching workload consists of the pre-active (prior to the task) and the interactive (classroom) teaching workload.

Team Report: The report of the evaluation of a particular institution or program, resulting from a site visit by accredited assessors. Such reports result in an accreditation or quality assurance recommendation or denial (an adverse action). (U.S.A.)

Technical or Vocational Training: Training, rather than education or learning, which is designed to prepare people to undertake particular roles, responsibilities and tasks in one or more jobs, occupations, professions or trades.

Technical Requirements: When used in technology enabled learning, these are simple statements of parameters for a technology based solution addressing topics such as the number of people who will use the system and where they are located, the numbers and types of transactions that will need to be processed, and the types of technology components that need to interact.

Technical Support Staff: Personnel who support and maintain the computer and network systems.

Technology: The study and systematic application of the mechanical arts and applied sciences to all aspects of human behaviour and activities, more especially in the productive process and the solution of complex problems.

Technology Based Education: In the context of teaching and learning, a technology based education is a system in which a media other than print has a major role – hence this includes the use of radio, video conferencing, e-learning, etc.

Technology Enhanced Learning: This refers to all learning activities whose efficiency and effectiveness are in some fashion way improved by the application of any form of or electronic media, such as audio or video.

Technology Mediated Learning: Learning activities and experiences which are facilitated through the use of information and communications technologies

Technology Plan: A plan detailing how an institution will utilise information and communications technologies in its future operations.

Technology Resources: The totality of resources (hardware, software, networks, staff, funding, etc.) which together can be used in the implementation of a technology plan.

Teleconferencing: The simultaneous visual and/or sound interconnection which allows people in two or more locations to see and talk to one another. (See also Video Conferences)

Telecourses: Programmes of learning in video format that are delivered via television or videotape formats.

Telematics: The convergence of telecommunications, computing (informatics) and televisual media. Providing or supporting learning by telematic networks and tools will be one of the central developments in open and flexible learning within the next decade**.**

Tele-mentors: Tutors and learning advisors, and other support staff for learners, who are temporally separated and geographically distant from the learners for whom they are providing support.

Telephone Tutoring: The use of the telephone for providing academic support to learners, either one-on-one by a direct call, or in groups through audio conferencing.

Telnet: A service which enables the user to log into a remote computer network and act as a terminal on that computer. Examples include library catalogues, databases, and bulletin boards.

Tertiary Education: Any education entered after successful completion of secondary education. The term includes professional and vocational post-secondary education (leading to a certificate) and higher education (leading to a degree), although the designation is often used interchangeably with the higher education sector.

Testing: When used in the context of technology enabled learning, this term includes facilities to assist in the making up of practice quizzes, tests, exams, and other assignments.

Thesis: A thesis is a formally presented written report, based on independent and original research work, which is required for the award of a higher degree, generally a second cycle degree or doctorate. (Europe and U.K.)

Third Party Comment: Recognition statement of a party (other than the accrediting agency and the applicant institution) seeking to address an applicant's efforts to meet an accrediting organization's recognition standards. (U.S.A.)

Threaded Discussion: A hierarchical method of ordering and sequencing contributions, remarks and opinions about a given topic that are supplied by users, via computer mediated communication with the Internet or an Intranet. When used in the educational context threaded discussions can constitute a valuable learning tool and experience, being similar in character to an online seminar. To establish a threaded discussion, the tutor goes to the location for the discussion and posts an initial message which forms the basis for the subsequent discussion. As students respond to this stimulus by posting messages of their own, these messages are displayed, in outline, on the screen, but below the original message. When the user clicks on the message outline, the full message is

displayed. As subsequent replies appear, they are posted below the previous response. The visual positioning of the messages on the screen, as they appear within the thread, varies in accordance with the software (WebCT, Blackboard, etc,) being used. In the most common screen arrangement, contributions to threaded discussions appear in "step" formation, down from left to right. For example, for threaded discussions within programmes run by the U.K. Open University and utilising the First Class mail system, the initial topic message appears on the left of the screen, the first reply is positioned below the topic message and to the right, the second reply would be positioned below the first reply and to the right of it, and so forth.

TNA: (See Training Needs Analysis)

Total Cost: The sum of all the costs attributed to some specific product, project, process or activity.

Training Needs Analysis (TNA): Also known just as needs analysis, this is the process for identifying the learning and training needs of a particular group, organisation, or population. It is often undertaken by means of (inter alia) questionnaires, surveys, focus groups, etc.

Training: Passive one-way instruction, which emphasizes job-specific, near-transfer low level learning objectives; traditionally the term refers to skills-based instruction, often work based, as opposed to education or learning.

Transcript Based Assignments: The use of transcripts of online interaction to promote learner reflection. This is done by asking the learners to reflect on their overall personal contributions during a learning experience or activity, or to summarize their previous contributions on a specific topic, within a threaded discussion. In this way Transcript Based Assignments: provide a personal insight for the learner of changes in their views, beliefs, ideas, perceptions, etc. that have resulted from their learning experiences and learning activities. (See also Learning Journal, and Threaded Discussion)

Transfer: (1) At a personal level, the application of new knowledge and skills to a variety of real-life situations and future learning tasks.
(2) At an institutional level, the transfer of technology into the work place, and to new productive processes, usually by means of a national innovation system.

Translator: An electronic device which converts data from one system of representation into different yet equivalent data in another system of representation, without loss of information or integrity. In telephone equipment, for example, translators converts dialed digits into call-routing information, which enables the connection to be made.

Transparence: The ability of information and communications technology to perform so flawlessly and discretely as be invisible when used by a user for a particular function or task. When technology is transparent, the user is so unaware of the technology that s/he is able to concentrate wholly on the task in hand

Tutor Assessed Question (TAQ): (See Assignment)

Tutor Marked Assignments: Assignments which are marked by the learner's tutor.

Tutor: Also known, depending on the nature of the learning experience, as coach, counsellor, mentor, supervisor or trainer. In the context of open and distance learning, this is a general term for the persons who are directly responsible for all aspects of the learner's progress. The tutor's main task is to help the learner to acquire knowledge, skills, and confidence to become an autonomous learner, usually through the mastery of a particular subject area or discipline.

Tutor Support: The provision whereby learners can arrange to interface with a tutor to discuss their progress and problems with the course, assessments, etc. The form of tutor interface can take many forms including face to face meetings, telephone calls, email, etc.

Tutorial: A tutorial is a period of interaction between a tutor and learners which is aimed at exploring, via discussion in greater depth, subjects and topics presented within a course unit or module. The tutorial can be face to face or via computer mediated communication, similarly the subject material which forms the basis for discussion can have been previously delivered by a live oral presentation (lecture), or some other means (printed learning material, audio or video materials, etc.)

Tutorial Tryouts: A system of developmental testing which involves testing the learning materials with one learner or a small group of learners, and getting feedback, before releasing the materials for use by all students. (See also Field Trials)

Tutoring: The provision of academic assistance to, and support for, learners by a subject specialist, usually provided in one of three forms major forms, depending on the pedagogic model being used:
1. Live and face to face
2. Live and conferenced (video, audio or computer**)**
3. Stand-alone, for example, in computer-assisted and computer managed learning (CML))

Two Way Instructional Radio: The use of radio broadcasts for the purposes of distance education, which are combined with interaction between learners and tutors, and other learners though some form of telecommunications e.g. two-way radio links.

UCAID: (See Internet2)

UCP: Acronym for User Control Point (UPnP)

UDP: Acronym for User Datagram Protocol.

UI: Acronym for User Interface.

UMTS: Acronym for Universal Mobile Telephone System.

Undergraduate Studies: Undergraduate studies are defined as those normally carried out prior to the award of a first degree. (See also First Degree)

Ungraded Assessment: An assessment which does not result in the student being awarded a grade or ranked result. Hence ungraded assessments produce results that are usually defined as Pass/Fail or Satisfactory/Unsatisfactory.

Uniform Resource Locators (URLs): The universally accepted method of representing hypertext addresses for web pages and websites on the World Wide Web. A URL usually comprises an initial descriptor which refers to the name of the business or service with which the website is connected (e.g. Ford, Xerox, Nokia, etc.), a second part specifying the nature of the business or service (so “com” or “co” refers to company, “gov” refers to government, “ed” “edu” and “ac” refer to education) and optionally a third part which specifies country (“mx” for Mexico, “fi” for Finland). There may also be further parts specifying the address of the computer on which a document or service is located and the names and dates of files.

Unit: An educational institution, a faculty, a whole programme of study, or parts of it.

Unitary System: A system of structuring and organising of tertiary education within a country whereby it is offered only in one type of institution, consisting of universities or university like establishments, can be contrasted with a binary system.

Upgrade: (1) Computer hardware - to add memory or newer types of equipment to a computer system.
(2) Computer software - to install a higher version or release of a software programme on to a computer.

Uplink: The capability of sending an electronic signal to a transponder on a satellite.

UPnP: Acronym for Universal Plug’n’Play.

UPT: Acronym for Universal Personal Telecommunications.

URL: (See: Uniform Resource Locator)

USB: Acronym for Universal Serial Bus.

Usenet: A global network of news servers, which can be accessed via the World Wide Web

Users: Generic term used to refer to all those people who use information and communications technology (both hardware and software) as tools to undertake specific tasks in both their work roles, and for leisure.

Utility: Software Computer programs that are used to manage, retrieve and back up files.

Validation: (1) An internal process operated by degree-awarding higher education institutions to ensure that all credit bearing programmes designed and provided by them, or by other institutions acting on their behalf and in their name (for example, through a franchising arrangement), are at an appropriate standard and of sufficient quality to lead to the award in question. For example, in the U.K. all degree award schemes are subject to initial validation on their creation, and re-validation at set intervals, once the programme is running.
(2) External independent review of a higher education institution or one or all of its programmes by an outside quality assurance structure. The process by which a national or professional accrediting institution adjudges that a program developed and delivered by an institution or organization is of an appropriate quality and standard.

Validity: The extent to which an assessment strategy or activity actually assesses what it is intended to assess. Validity of the results of an assessment activity can be best defined as the extent to which the results measure what they purport to measure.

Variable Costs: Costs that vary with volume of output.

Variances: Used in accounting procedures and refers to measures of financial performance which are derived by comparing the original budget plans with the actual financial out-turn.

VCR: Acronym for Video Cassette Recorder.

VDU: Acronym for a Visual Display Unit

Version: A major new edition of a software program. The version number changes when a software developer makes major alterations to the software such as adding new features. The version number is usually whole number following the name of the software, for example EndNote Version 8. On some occasions, where the change is major, the software may be renamed – so for example, the names of next version of Microsoft Windows software is "Vista." (See also Upgrade)

Video Conference: An arrangement of information and communications technology, especially using telephony, in which television monitors, video cameras and microphones are linked to support two-way video and audio communication so that people in two or more geographically distant sites can all see, hear and speak to one another at the same time. There are basically two types of video-conference sessions**:** point to point and multi-point.

Video Conferencing: The ability for two or more individuals or groups at geographically distant locations for interactive synchronous visual and audio communication and participation in the same meeting at the same time using analog or digital video capabilities, allied to the use of telephonic technologies.

Video Disc: A disc on which video and audio signals are recorded for television use; a videodisc requires a video player compatible with the video disc.

Video Mail and Video-on-demand: Video-mail can be considered as a video enhancement of e-mail, whereby users send short videoclips to each other. Video-on-demand is associated with more substantial quantities of video material and offers a way of accessing, for example, a feature-length film. The 'on-demand' elements means that the video can be accessed at any time which suits the user.

Virtual Classroom: Term used in technology enabled learning to refer to the delivery of a scheduled educational offering to multiple locations (either desktop or classroom) via a networked solution.

Virtual Learning Environment: (See Managed Learning Environment)

Virtual Learning: This refers to all learning activities that occur in non-contiguous educational settings where the learners and their teachers are separated temporally and spatially.

Virtual Reality: A complete environment that is assembled and managed by a computer program, one in which the user enters and interacts with the program. The users wear a special interface that puts them on the playing field and makes them the players.

Virtual Spaces: Include MOOs, MUDs, and virtual meeting rooms.

Virtual Worlds: These are artificial environments that are designed to reflect real-life situations.

Vision: The ideal state or condition that an organization would like to achieve. (See also Mission Statement)

Visual Designer: (See Media Designer).

Visual Display Unit: Also known as a monitor, refers to a device similar to a television screen that receives video signals from a computer's central processing unit and displays the information for the user.

Visual Style: In respect to technology enabled learning, visual style includes all those issues concerning the visual appearance of learning materials to the user. Visual style is important in developing an identity for the user and maintaining familiarity with the form, content and approach of the learning materials and activities on offer.

VLE: (See Virtual Learning Environment)

VM: Acronym for Virtual Machine.

W3C: (See World Wide Web Consortium)

WAN: (See Wide Area Network)

WAP: Acronym for Wireless Application Protocol.

WBT: (See Web-Based Training)

Web Based Distributed Authoring and Versioning (WebDAV): WebDAV is an open working group which is developing DAV, a specification for collaborative work over the Web. (See at www1.ics.uci.edu/pub/ietf/webdav/)

Web Based Learning: This refers to all learning activities that are managed on the World Wide Web.

Web Based Role-play Simulation: This refers to role-play activities that are carried out on the World Wide Web. (See also Online Role Plays)

Web Based Training (WBT): Generally refers to any instructional event that can be accessed via the Web. More specifically, a form of computer-based training in which the training material resides on pages that the user accesses via the World Wide Web. Typical media elements used are text and graphics, although other media such as animation, audio, and video can be used, but require more bandwidth and in some cases additional software. The terms "online courses" and "web-based instruction" are sometimes used interchangeably with WBT.

Web Browsing Tools: Computer software that enables files stored on web servers to be accessed and displayed and HTML documents to be viewed while accessing an Intranet or the Internet. (See also Browsers)

Web Client: The piece of software that runs on a user's machine to provide an interface to the World Wide Web. The most widely used Web clients are Netscape Navigator and Microsoft Internet Explorer.

Web Page: The contents of a single HTML file.

Web Server: The software that delivers web pages (HTML files) over the World Wide Web.

Web Site: A collection of HTML files (i.e., Web pages) made available from a Web Server.

Webcast: A live audio and video picture broadcast over the Internet that can be viewed and heard using bespoke software such as RealPlayer.

WebDAV: (See Web-based Distributed Authoring and Versioning)

WECA: Acronym for Wireless Ethernet Compatibility Alliance.

Whiteboard Facility: In connection with technology based learning, the ability for remote users to jointly access a shared text window and make changes and additions to the content on it, the software may also enable shared drawing.

Wide Area Network (WAN): A network of computers that links local area networks and individual computers over a widely dispersed geographic area. More specifically a data telecommunications linkage (e.g. dedicated line, radio waves) used for connecting computers over distances greater than the distance covered by local area networks (e.g. building to building, city to city, across the country, internationally) which allows users to communicate and share information, via wide area networks such as the Internet.

Wideband: A medium capacity communications path with speeds of 64 Kbps to 1.544 Mbps. (See also Broadband and Narrowband)

Wireless: Voice, data, or video communications without the use of connecting wires. In wireless communications, radio signals make use of microwave towers or satellites. Cellular phones and pagers are examples of wireless communications.

WLAN: Acronym for Wireless Local Area Network.

WML: Acronym for Wireless Markup Language.

Workstation: A computer that is intended for individual use but is generally more powerful than a personal computer. A workstation may also act as a terminal for a central mainframe or a server for a printer.

World Wide Web (WWW): A telecommunications protocol and a standard, common hypertext or hypermedia interface of the Internet that deals with text, audio, video, animation, graphics and colour - anything that a computer programme can produce – which allows users to search for and access information from websites all over the world. The WWW simplifies the location and retrieval of various forms of information including text, audio and video files.

World Wide Web Consortium (W3C): An open consortium, the W3C creates the specifications, guidelines, software, and tools for the World Wide Web and concentrates on general infrastructure such as HTTP, HTML, XML, RDF, SOAP, and Web Accessibility Guidelines. The W3C produces open specifications called "recommendations" and plays an important dissemination and testing role, it also produces reference implementations such as the AMAYA Web browser. (See at www.w3.org)

WSLT: Acronym for Workshop on Learning Technology

WuC: Acronym for Wired-up Communities.

WWW: (See World Wide Web)

Xanadu Project: The project initiated by Ted Nelson to create a worldwide hypertext system. The Xanadu Project was support by Autodesk Corporation for a period.

XML: (See Extensible Mark-up Language)

XP: Acronym for XML Protocol (W3C WG building on SOAP 1.1)

Zone of Proximal Development (ZPD): A level or range in which a student can perform a task with help.