**LECTURE ONE**

1. **Background: Terminology and Basic Concepts**
	1. **Terminology and Definitions**

 Since the invention of the computer in the 1960s, its possible use for education has been increasingly examined resulting in different labels that correspond to its use (LeBaron-Earle, 2013). These labels include:

**CASLA:** Computer Applications in Second Language Acquisition

**CAI:** Computer Assisted Instruction or Computer-Aided Instruction refers to learning at the computer, but not necessarily with a language focus. Although it may not be the intention of all those who use the acronym, the term instruction suggests a teacher-centred approach.

**CAL:** Computer-Assisted Learning, as with CAI, CAL may refer to using a computer to learn any subject (including languages) using a computer. But, in contrast to CAI, CAL emphasizes the learner.

**CALI:** Computer-Assisted Language Instruction, a term once commonly used in North America.

**CALT**: Computer-Assisted Language Teaching, CALL but with emphasis on the teacher.

**CALT:** Computer-Assisted Language Testing or Computer-Adaptive Learning Testing. Computer-adaptive testing refers specifically to situations in which the computer assesses the answer to each question and raises or lowers the level of difficulty accordingly.

**CAT:** Computer-Adaptive Testing using a computer, but not necessarily testing language acquisition.

**CAT**: Computer-Assisted Teaching refers to learning at the computer, but not necessarily with a language focus.

**CBT**: Computer-Based Training tends to refer to programs used for corporate training with narrow and short-term instructional goals but may refer more generally to any kind of training. The term is not often used in the language learning context except where it refers to the teaching of some discrete language learning skills, such as listening.

**CMC:** Computer-Mediated Communication or **CMHC:** Computer- mediated Human Communication refers to a situation in which computer-based discussion may take place but without necessarily involving learning. However, opportunities for learning are inherently present, especially in situations in which learners need to engage in negotiation of meaning with native speakers of the target language or even with peers of non-native proficiency.

**CBI:** Computer Based Instruction or **CMI:** Computer-Mediated Instruction refers to instruction that takes place through the use of a computer and may, for example, include learning that occurs when a learner communicates with a distant tutor through email or simply uses some form of computer hardware and software. Again, the term instruction shows a teacher-centred approach.

**TELL**: Technology-Enhanced Language Learning refers to any technology used in the classroom such as video, tape recorders or even entire listening labs.

**WELL**: Web-Enhanced Language Learning refers to CALL that focuses on the WWW as the medium for instruction (Beatty, 2010).

 However, the acronym ‘CALL’ emerged first at 1983 out of the TESOL convention in Toronto, Canada. It refers to “the broad range of activities associated with technology and language learning” (Chappelle, 2005 p.743). It was at the beginning marginal, but it gained recently the interest of researchers. Brett & Gonzàlez LLoret (2009) defined CALL as a wide field “that includes the use of Internet […]; communication tools[…]; software and applications designed specifically for language learning, the authoring and publication of web, digital audio and video materials, etc.” (Brett & Gonzàlez LLoret, 2009 p. 351).

 Hence, CALL or CBI (computer based instruction) refers simply to the use of computers in different manners to facilitate the process of teaching and learning. It is “any process in which a learner uses a computer and, as a result, improves his or her language.” (Beatty,2010 p.07); this definition implies the use of a variety of activities and applications to suit a range of learning and teaching styles. Materials for CALL may include those which are purpose-made for language learning and those which adapt existing computer-based materials, video and other materials.

* 1. **Intelligent CALL**

 Intelligent Computer-Assisted Language Learning is a field within CALL. It describes software programs which attempt to customize feedback features that cater to individual learners’ input through applying concepts and techniques from artificial intelligence. The latter refers to the science of making intelligent machines such as robots. Research of artificial intelligence which is relevant to CALL is that in the four following branches: (1) natural language processing, (2) user modelling, (3) expert systems and (4) intelligent tutoring systems (Schulze & Heift, 2013).

 Natural language processing deals with natural language understanding and natural language generation. In natural language understanding, the software turns the written or spoken language input into a formal representation (e.g. a detailed tree representation) that captures phonological/graphological, grammatical, semantic and pragmatic features of the input (PRAAT application). However, In natural language generation, the system affords natural written/ spoken output after being provided by information (e.g. syntactic, semantic and pragmatic rules of certain utterance types or lexicon; a city’s geography…) stored in a database.

 User modelling, or more particularly student modelling, offers a student model that observes their actions, maintains them, then, reuses them to infer beliefs about the student’s knowledge and abilities.

 Expert systems capture relevant knowledge about a particular domain (e.g. grammatical and linguistic structures). ICALL applications use the expert systems to communicate knowledge about linguistic/ grammatical structures to the student when necessary and upon request.

 Intelligent tutoring systems (ITSs) are used in the teaching of various subject matters, domains and instructional settings including various languages and different levels of proficiency. “For instance, *Robo-Sensei* is a commercial ILTS for Japanese for all proficiency levels (Nagata, 2009 ); *Tagarela* teaches beginner learners of Portuguese (Amaral, 2007 ; Amaral & Meurers, 2007 ) and The *E-Tutor* is a comprehensive language learning environment for all proficiency levels of German (Heift, 2010b )” (Schulze & Heift, 2013 p. 250).

* 1. **Basic Concepts**

 Besides the aforementioned labels, new terms that describe types of learning within which technology may be used emerged, and between which a distinction should be made. These terms include e-learning, online learning, distance learning, and blended learning.

 E-learning is the use of technology to learn anytime and anywhere; it may include training, the delivery of just-in- time information or guidance from experts. Falch (2004) distinguished four types of e-learning: e-learning without presence and without communication, occasional e-learning without presence but with communication, e-learning combined with occasional presence, and e-learning used as a tool in classroom teaching (Negash &Wilcox, 2008). In other words, e-learning may take place at home through the use of different technologies such as videos, software, net-applications… (self-learning) without physical presence in class and without e-communication; or learners may be physically absent but keep contact with the instructors through e-communication; or they may be physically present but use e-learning and communication to obtain the lectures they did not attend or to search for more clarifications and explanations; or both face-to-face interaction and e-learning co-occur in the class.

 Although e-learning and online learning are most of the time used interchangeably, it is of salient importance to recognize that “e-learning can encompass any form of telecommunications and computer-based learning, while online learning means using specifically the internet and the web” (Bates, 2005, p. 08). In other words, online learning takes place via the net while e-learning occurs with the use of any electronic device and not necessarily online.

 Distance learning is that type of learning where the teacher and the learners are apart or distant from each other. In distance learning, both electronic and non electronic media are used. Within this vein, Anderson (2005) argued that online learning is that kind of learning that takes place via the net, e-learning takes place through all electronic media not only the net. Then, e-learning is broader than online learning, but it is a subset of distance learning.

 Blended learning (or Hybrid learning) “represents a compromise, combining a face-to face component with computer-based distance learning where teacher and learner interact dynamically” (Jordan et.al. 2008, p. 228). It is defined as “leaning that combines online activity with more traditional periods of face-to-face contact and classroom interaction” (O’Dowd, 2007 p. 18). The interaction with a variety of materials and technologies gives this kind of learning the advantage of satisfying the needs and the learning styles of a wider audience. Besides, it helps in building learners’ knowledge and enhancing their learning that take place through active engagement and collaboration with peers, teachers and experts. The latter would increase learners’ motivation, reflection and autonomous learning (Jordan et.al. 2008).

 Jordan et.al. (2008) identified four main approaches within blended learning; self regulated approach, pedagogical approach, mixed approach, and learning outcome-based approach. In the first approach, interaction takes place between learners and ICTs without the interference of the teacher, to achieve a particular learning outcome. This approach is very common these days; learners have become familiar with the use of different and multiple ICTs in parallel with their classes. They may use applications on their smart phones or personal computers, e-dictionaries, online translation, and sharing tools/applications such as social media which enable them to learn in an easy and simple manner.

 In the second approach, the pedagogical approach, the teacher selects both the teaching method with the appropriate ICTs to be used in a particular context, with the aim of achieving a particular learning/teaching outcome. The selected ICTs may or may not be used at the same time while delivering instruction. On the one hand, the teacher may use ICTs while delivering instruction to present the teaching material (e.g. video, audio), then learners may discuss and reflect on the content with the teacher/ peers, or do some type of activity which does not require the use of ICT. On the other hand, the teacher may not use the ICTs inside class but outside class, the most prominent example to be mentioned in this case is the recent use of videoconferencing to link distant learners with their teachers, or to link them with other speakers/ learners of the language, in order to achieve a particular learning outcome.

 In the third approach, the mixed approach, face-to-face instruction is used along with instructional technology during the delivery of lectures. In the Algerian context, the use of data shows to present the material is a very common practice that could be used to illustrate this approach. In other developed countries, other tools e.g. I-pads, are also used.

 In the last approach, the learning outcome-based approach, learning outcomes differ throughout the syllabus, and thus, to achieve them different ways of delivery may be needed. Henceforth, the learning outcome determines whether to use face-to-face or technology instruction. In other words, following this approach implies that both the methodology and the ICTs used are carefully selected based on the learning outcome of a particular lesson.

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