CALL (Computer-Assisted Language Learning) and Distance Learning

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Computer-Assisted Language Learning (CALL), grown at crossroads of technology and language learning, respond to human needs, industrial and educational development, cultural demands, entertainment and business. CALL programs, incorporated into distance-learning systems, offer students wide range of texts, multimedia materials, pre-structured exercises, tests, etc. In the paper, interconnection between e-learning *Omega* system and *CALL* course is given. As the course represents combination of theory, evaluation, development of individual practical skills and students' teamwork, advantages of the e-learning system will be presented.

Use of new technologies in language learning offers unlimited possibilities, but also recognizes the irreplaceable role of teacher whose organizing and communication capabilities enforce interactive communication. Demanding higher level of linguistic knowledge and computer skills, use of e-learning system in CALL course would be more suitable for advanced learners as a supplement material to classical teaching.

Key words: CALL, distance learning, blended learning, ICT

I. INTRODUCTION

In the era of life-long learning and multi-lingual communication, need for distance education has become obvious, not only in educational environment, but also in home-study setting. Use of ICT technology in language learning could bring different advantages, but also demand certain skills, organization capabilities and additional time in order to provide new learning experience. Blended learning, combining distance learning, online tutorials with face-to face learning, could offer improvement on existing methodologies.

CALL (Computer-Assisted Language Learning), i.e. TELL (Technology Enhanced Language Learning) has gained considerable attention in academic and research institutions, focusing on interactive communicative support for enhancing user's skills of listening, speaking, reading, and writing. CALL/TELL has entered the integrative phase[1] where computer is not only used as a media for delivering instructions as in behaviouristic phase or as a tool in communicative phase, but integrates multimedia packages, CD-ROMs and Internet supporting skill-based activities, interactive learning and self-access as an approach in teaching and learning.

Possibilities of creating rich multimedia environment, additional activities for individual research and practice, course management administration, interactive learning, self-access, unlimited time and personalization are probably some of the key factors for blended learning. Integrating CALL/TELL into traditional learning environment with suitable methodological and pedagogical approach, some new skills could be developed, as well as multicultural communication.

II. DISTANCE LEARNING/ BLENDED LEARNING/ E-LEARNING

While e-learning is sometimes perceived as a synonym with online learning or distance learning on the Internet, according the UK government the "e" stands for electronic, which embraces all aspects of ICT from using a word-processor for producing printed handouts to a full-blown online course wrapped up in a Virtual Learning Environment (VLE)."

A VLE is a Web-based package designed to help teachers to create online courses, together with facilities for teacher-learner communication and peer-to-peer communication and can be used to deliver learning materials within an institution or within a local education authority. One of such systems is Moodle, the open source software, which the user is free to download, use, modify and even distribute. Such systems are also referred to as a Course Management System (CMS), a Learning Management System (LMS), and a Learning Support System (LSS).

The term[2] *distance learning* is taken to mean, principally, individual learners working by themselves, at a convenient time and place as well as, to some extent, their own pace. It encompasses some aspects of open learning i.e. certain level of openness in terms of place, time, pace and content of learning, as well as aspects of *resource-based learning i.e. usage of* resources presented in different media, crucial for developing and practicing in reading and listening skills.

Furthermore, the term blended learning in CALL tends to describe a blend of distance learning online with face to face tutorials. Being

connected from *a distance* to a centre, students can access and use organized courseware materials or the free online language learning materials.

Such courses take a multiple-media approach, where education materials consist out of learning packages containing text books, audio and video materials, together with animated pictures, tutorials and tests, sometimes offered only in electronic environment and in some cases as a supplement to the published materials.

When discussing language learning, it is necessary to discuss the blended learning which combines the traditional face-to face learning and certain aspects of distance learning like usage of supplement materials in the form of online tutorials, tests, assignments and various resources which can be accessed in classroom or from home. The major advantages of implementing blended or distant learning into language course are: course management and administration (grading assignments, students attendance, communication between student and teacher, etc.); delivery of content (up-to-date content students can access, multimedia materials in targeted language); target language communication (opportunities to interact in the target language with other students, tutor and native speakers); collaborative work (ICT4LT Module 4.1).

Implementation of blended or distant learning is possible both in school and universities, as well as in adult education and life-long learning, with the prerequisite of possessing basic computer skills. Having possibility to work independently with available materials and online resources, without time limitations, completely at one's own pace (discovering new topics, practicing, etc.) these could be motivators for self-access learning. On the other side, social contact, regular obligations, problems with hardware/software could be disadvantages to overcome.

III. CALL AND DISTANCE LEARNING

Although it was developed on the ICT basic, apart from distance learning, CALL could be incorporated into blended learning approach, an thus offered as part of distance education programs. Having in mind that the interconnection between CALL and distance learning is still in development phase, at least in Croatia, it refers mainly to three types of computer applications in the home-study environment [3]:

1.**Computer-Managed Instruction** focuses on the computer as a management tool which facilitates administration of the learning process.

It enables communication with students, on-line registration, tracking of student's work within particular course, exam generation, testing in groups with random option, test correction, etc. Computer-Managed Instruction could be used to evaluate skills in listening, reading, writing and even speaking.

Testing could happen as the pre-test for particular course, i.e. as diagnostic test in order to determine level of knowledge and to determine the prerequisite skills on which the course may be based. This way computer-assisted testing could serve as primary, but it doesn't have to be the sole way of evaluation. In determining the student's level of practical prerequisite skills on which a course may be built, additional multimedia components could be used, such as animations, audio and video recorded materials, which could be used for listening, reading, writing, speaking, understanding, etc.

The ICT4LT Module 4.1 makes difference between formative and summative assessments, indicating that the *formative assessment* is mainly used in tests for diagnostic the students' progress in specific areas or for self-assessment, because of immediate feedback while the *summative assessment* is mainly used at the end of the course measuring often the acquired skills. According to D. Abrioux, summative evaluation within a course could primarily test to determine how much of the material and how many of the concepts presented in a course have been understood and mastered by a student and according to prior knowledge the teacher could give student certain credit.

2. **Computer-Aided Learning (CAL) / Computer-Assisted Language Learning (CALL)** consists of software applications and materials realized thought different media (that usually serve as supplement material), which fall under various categorization principles:

- According D.A.M.X. Abrioux, CALL software could be divided into two main categories: tutorials and simulations.
- The others tend to classify them as text tools and presentation software and software applications, or as content-free and content specific software application.
- Hardisty and Windeatt[4] distinguish between school programs (exercises involving gap-filling, multiple choice, sequencing, matching, text reconstruction), office programs (word-processing, database, DTP, communications, spreadsheets), library programs (concordances) and home programs (adventures and simulations).
- Another authors distinguish among authoring programs, grammar, vocabulary, reading skills, writing and word processing, oral skills, listening

skills, information sources, discover and exploration.

- Bax[5] offers three new categories: restricted CALL (allowing only to refer to a theory or rule), open (in terms of feedback given to students and role of the teacher) and integrated (technological innovation embedded in everyday practice) indicating that we are using the open CALL, and that our aim should be the state in which technology would be invisibly integrated into everyday life.

Regarding integration of CALL material into distance learning, it is often pointed out that only *human* can adjust to changes, develop new knowledge and use it in infinite ways using proper methodological approach and work on human interaction. The author D.A.M.X. Abrioux indicates that problems of accessibility, bigger memory demands and on-line access which contribute to institutional costs, could be partially handled by regional. In order to teach language at distance, new developments related to language teaching have made CALL valuable resource for aiding the language learner at distance.

When talking about CALL applications there are strong discussions regarding evaluation and usefulness of software, pointing out different approaches in language learning. While some theorists and researchers believe that the «value of the computer as a learning aid in language acquisition lies in the use of creative communicative software (games and simulations) rather than in the use of "wrong-try-again" drills», others would argue that drill and practice type of exercises have valuable function, since it permits teachers to focus on developing other communicative skills during class time. The main importance of using CALL software lies in the possibility to enforce communication, skill-practicing, self-access and critical approach in the target language. CALL supposes *interactive communication* where exercises are immediately corrected enabling the student to proceed with other activities, or if the answer is incorrect, the student should be given the appropriate feedback in the form of rule, example, new trial or right answer and error explanation.

CALL applications integrated into distance learning would mean possibility for *home-study exercises* and activities, although the answers for exercises are generally checked through specific option or sent to the tutor who corrects them and sends back the corrected exercises. Exercises should be adapted to the certain level (beginner, medium, advanced, expert). In that way CALL software could serve as optional, complementary component of the distance delivered language course.

In CALL applications particular interest is shown for listening skills and comprehension used in distance education setting. This way students could listen to the pre-recorded material and work on it as needed: replay, answer, slow down, break into sentences, work on vocabulary, write down, etc. The same components could be used for another learning activity – dictation, where two skills can be developed: listening and writing. In order to enhance communication activities, special attention is given to programs that motivate for conversation in the distance education environment (e.g. programs that support conversation in a restricted domain, as in the supermarket, hotel reservation, conversation with psychiatrist, etc.). Although computers can recognize only the foreseen sentences, the real-life situations could be discussed.

3. **Computer Conferencing** meaning electronic network which enables individuals to communicate via computers in delayed asynchronic time as a group, between individuals, or with database. In its simplest form it is e-mail, enabling communication between students assigned to the course and between students and tutor, or between tutor and system manager.

Computer conferencing is often referred as integral teaching component, i.e. communication tool for a distance education course. As the basic goal of language acquisition is communication in target language, video conferencing could be also well-used for the purpose of language learning in CALL and in distance education environment. According to BBC report, distance learners make use of additional material, links, exercises, etc. Although oral communication is preferred, the network communication (e-mail, computer conferencing, remote tutorials, tests, etc.) represent kind of improvement relating to pure classic written communication

Advantages that ICT could bring to language learning courses are offered in ICT4LT Module 1.4:

- *Course management and instruction* in the sense of using course management and administration, saving on staff time and the costs of mailing, including also e-mail communication.
- *Delivery of content* through distance learning system including all type of multimedia pre-recorded material, as well as tasks of managing, updating, security and accessibility of online material.
- *Target language communication* in the sense that ICT technology could improve lack of possibility of alive communication. Using different types of course components (formal and informal) it is possible to improve communication in the target language.

- *E-mail* between learners or between tutor and learner could be used for communication in a team work or for discussing a particular topic in advance of an assignment
- *Discussion lists* suitable for large groups of student in order to argument the opinion. It is desirable to have moderator who could use it for correction of mistakes, language analysis, etc.
- *Chat rooms* that could be used for informal contacts with native speakers
- *MUD and MOOs (MUD* - standing Multi User Domain or Multi User Dungeon- type of real-time Internet conference enabling users to send email or to manipulate objects in an imaginary world; *MOO* - standing for Multi-User-Domain Object Oriented, i.e. these *a*re essentially "virtual worlds", some of which are specifically designed for language learning).
- *Tandem learning* indicating form of learning between two users of different native languages, working in pairs, with purpose to improve their language skills and to learn more about another culture.
- *Online oral interaction* is probably the most exciting way of using ICT technology in language learning. It is possible to join existing groups, or to create "private" rooms for the duration of the session when they are created. Special way of communication is video conferencing connecting computers that are equipped with video facilities
- *Community building* in the sense that online communication brings affective component, raising motivation and creating kind of community.
- *Computer Aided Assessment (CAA)* is of special importance covering a range of assessment procedures and use of computer technology in order to take part in the assessment process. Special attention is given to types of skills that could be accessed: listening, speaking, reading and writing using adequate software, possibility to record the students' answers and evaluate them.

IV. MEASURING INTERACTIVITY

According to Robyler & Ekhaml[6] one of the key factors is student's perception of the degree of interaction, which seems to have impact on student achievement and satisfaction. Trying to determine degree of interactivity in distance learning courses, the authors distinguished four elements that contribute to a course's level of interaction and interactivity:

- Social rapport building among class members and between class members and instructor – activities created by the instructor
- Instructional goals of interaction to encourage reflection and discussion on course topics, focusing on instructional designs to increase this

kind of participation and feedback; created by the instructor
- Types and uses of technologies that facilitate interaction, such as videoconferencing and web-based resources. Besides technology, it includes techniques, design and methods.
- Impact on interactive qualities of learners, reflected in learners increased of decreased willingness to use various technology resources, to collaborate and to participate in class activities.

V. BLENDED LEARNING AT THE DEPARTMENT OF INFORMATION SCIENCES IN ZAGREB

The ambition to implement educational reforms in line with educational policy statements in Croatia and the challenge to master the first step towards a new 21st century educational paradigm, the first ICT supported classes where organized at the Department of information science, Faculty of Philosophy in Zagreb in the academic year 2000/2001.

As the Faculty of Philosophy at the University of Zagreb functions almost as an huge university constituted out of 23 Departments, 33 undergraduate programmes and around 6100 students of whom the majority studies at two departments i.e. has two majors, a constant problem of time and space for lectures and tutorials is present. Besides organizational and infrastructural constraints, need for the creation of new and robust teaching and learning environments using ICT was perceived as a prerequisite for the achievement of future educational reforms.

During the summer semester of academic year 20002001. A pilot e-learning course on school libraries at the Department of information science was implemented. This was an elective course, so students were offered an experimental e-learning course (for up to 15 students) which was to show weather this new style of teaching could be implemented. The only prerequisite was that students were computer literate and had access to Internet. Course was based on synchronous and asynchronous communication (e-mail, forum and chat), web-based learning as well as on students team work, research and projects. After two years of successfully conducting this course and positive students' attitude towards this way of teaching, and the demand for expanding this on several more courses we decided implement a open source courseware tool in order to create a virtual learning environment. The goal was to create blended learning environment where the ICT was to help in dealing with the problem of overloaded schedule (lack of time and space) as well as in enabling easier course administration, content

delivery, communication between students and professors, and collaboration.

In September 2002, a three year project *Organization of Information and Knowledge in the Electronic Learning Environment* (Organizacija informacija i znanja u elektroničkom obrazovnom okruženju - http://infoz.ffzg.hr/oizeoo) has started. The project, funded by the Croatian Ministry of Science, explored issues within the electronic learning environment. One of the project tasks was to investigate, test and evaluate open source (Learnloop, ZOPE, MOODLE…) and commercial solutions (WebCT, Blackboard…) and decide upon the best solution for the needs of the teaching staff of the Department of Information Sciences and in future the Faculty of Philosophy.

The decision felt on the free, open-source course management system (CMS) MOODLE[1] which was translated, customized and implemented for the academic year 2004./2005 under the name OMEGA. The fact that MOODLE is a free, easy-to-use system (i.e. everyone with basic computer literacy can easily use it) with simple and understandable interface was the main reason for implementing it. Furthermore, its large variety of modules and the ability of implementing new modules; SCORM compliance; autentification via LDAP or IMAP (e-mail) user accounts at the Faculty; were a major plus in deciding upon which system to choose and implement in a large heterogeneous institution as ours, baring in mind that the large number of staff is not enthusiastic about the idea of using ICT in their teaching.

Figure 1. Omega e-learning system

After spanning the majority of the Department of information science courses and several courses of the other faculty departments it has overgrown its departmental character and became a faculty-wide e-learning system. Currently (January 2006), there are 18 Departments offering their courses on OMEGA

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[1] The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment

with total number of 116 courses (104 visible and 12 invisible courses), more than 150 professors and assistants working on their courses and more than 6 GB of produced learning and teaching materials. With the star of the new academic year we have more than 1900 students enrolled in the courses offered on OMEGA. The number of courses, data, professors and students is increasing on monthly basis and during this academic year (2005/2006.) we expect it to grow.

Bearing in mind that within the humanities and social sciences the benefits of e-learning applications show lower rates of acceptance, which is mainly caused by prevailing traditions of teaching the respective subject, and the considerable pressure from within the university, particularly from part of the staff, to preserve the status quo, the popularity of OMEGA/MOODLE on a faculty-wide bases seems surprising. The reason for the positive attitudes could be explained through the phenomenon of blended learning, which does not require a complete break-up with traditional learning but the complementary application of the traditional and technological paradigm. On the other hand, the new educational reform and the implementation of the ECTS is also a major driving force for the teaching staff to shift and use new teaching and learning environment.

5.1 Using audio-video materials
Under the project OIZEOO several lectures from international and national experts and academics have been recorded. The main goal was to record lectures for students that were unable to attend them. The taped lectures were edited and offered as an .html file, accesses online or in classes via the OMEGA system.. Recordings are organized as a two simultaneously connected windows of whom one is the video of the lecture and the other is PowerPoint presentation. If necessary the third window, containing the internet resource shown during the lecture (e.g. searching catalogues, showing web resources….), was added and synchronized with the rest of the materials.
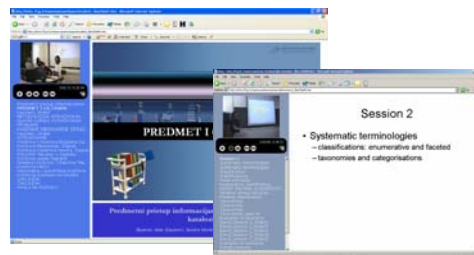

Figure 2. Examples of the recorded lecture

For video editing developing education materials we used a Microsoft programme MS Producer which is an add-on tool for users of the

MS Office PowerPoint 2003. The programme enables to synchronize audio, video, HTML files and still images with the MS PowerPoint slides in order to create dynamic and rich-media presentation. This could be also applied for the language learning for recordings of the native speakers, for students to learn and recognize different dialects. But more importantly students could learn and practice simultaneous translation

5.2 CALL course

The *CALL course* taught at the Department of Information Sciences, for students studying mainly information sciences and another, mainly, philological group, represents combination of theory, evaluation of existing materials involving critical thinking, practical implementation using suitable methodological approach and teamwork research on the specific task which is presented during class time. The course is skill-based (developing technical, critical, linguistic and cultural skills) and knowledge-based, pointing out necessity of proper pedagogical and methodological approach in CALL environment, i.e. in blended learning. The course is held via OMEGA distance learning system which enables online activities, communication with students and usage of various activities like tests, authoring tools, language resources, tutorials, games, etc.

VI. TRANSLATION WORKSHOP

Another interesting use of Omega system is for the translation workshop of the English language students. Due to a large number of students attending this course, the material to be translated is uploaded on Omega as a task to be done by the set deadline. Uploaded translations are then corrected, some advices and proposals given, and then again uploaded anonymously for all students to see most common mistakes, corrections, solutions and advices. Using "Choice" options, students then validate usefulness of tutor's feedback. Another interesting use is creation of glossary terms out of translated texts (politics, economy, law) which are then used during translation. Students also send useful links related to the domains of text to be translated, or use pictured or video clips of some event, give their opinions and create type of "community".

Although work with distance learning system takes additional time to prepare, organize and test, according the tutor's opinion, Omega has enabled better and more effective type of work, because of large number of students. Another advantage is the possibility to prepare materials and put them online, immediate feedback in the sense of homework corrections and uploading, student-centeredness, etc. Furthermore, the usage of the Forum enables better communication between students and professors. The main disadvantages are slow connections or even lack of Internet connections, when outside of the faculty, and sometimes lack of computers.

VII. CONCLUSION

The acquisition of new skills (technical, critical, linguistic and cultural) and knowledge, collaborative procedures, student-centeredness, new teaching techniques integrating language with technology and suitable methodology are some key factors for building intercultural, educated, organized, cooperative and flexible user, capable to work and enjoy in new educational environment. Aware of its demands regarding time and equipment, but incorporating certain segment of ICT technology according to learners' computer skills and language level, the teacher will try to develop methodology that will best develop the user's skills and knowledge. Besides importance of having digital content for not widely spoken languages, ICT enables creation of rich environment with all types of multimedia documents for use at a distance, i.e. outside classroom. Those changes can happen at secondary level and higher education, but also in adult education and life-long learning.

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