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Web Assisted Language Learning (WALL) and Learning Management Systems (LMS) in Virtual Centres for Foreign Languages

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ABSTRACT

The Web has had different uses in the teaching of modern languages: (a) as a source of resources: In a very short time, the Web has becoine the largest source of resources for the learning of any foreign language; (b) as a window of multimedia applications (in this way CD-ROM is replaced by the Web as the main ineans of storage of multimedia applications.); and (c) as an e-learning platform.

For an institution to create a Virtual Centre for Foreign Language Learning, certain software iiiust be installed in a computer connected to the Internet. This software is called a Learning Management Systein (LMS). Apart from the basic functions of the majority of the LMS, we should inention the advanced functions of the LMS: voice chats, digital television channel. inobile telephone services. WAP complementary services and access to the LMS through electronic pocket diaries (PDA). There are many comparative studies of LMS, carried out by consultants, specialist magazines, etc. Despite the proliferation of comparative studies of LMS. they have hardly considered the specific features of CALL software, in which the functions that proinote sound interaction should be more advanced. On the other hand, the subject of standards has becoine relevant. It is logical that the user who introduces contents into a given LMS would want the guarantee of being able to use those contents within another LMS.

KEYWORDS: Web Assisted Language Learning (WALL); Learning Management Systems (LMS); Virtual Centre for Foreign Languages; Web Based Training (WBT); Computer Assisted Language Learning (CALL); e-learning

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I. INTRODUCTION

The cnormious expansion of tlie Intcrnet, thanks to the popularization of the World Wide Web since 1994, has given birtli to a new discipline. thc acronyni for which is Wcb Assisted Language Learning (WALL). WALL is defined as: *the science that aims to study the use of the World Wide Web in the learning and teaching of second languages.*

The usc of tlie Web has brought great advantages to teaching in general. which we can summarise as follows:

- *Very easy to use*. Once wc have access to the Wcb, working with it is as simple as clicking the mouse, becausc it docs not entail any additional knowlcdge of computcrs. That is wliy we frequently talk of the "click culture".
- *A multimedia communication system.* Onc of the great iiiicroconiputing revolutions of the last Sew years is, witliout a doubt, tliat wc have been able to digitizc —that is, to represcnt in a code of zeros and ones— not only textual inforniation, but also sound and audiovisual information.
- *A means of world wide communication, in which, in comparison to other media —telephone, fax, normal post — the distance between the issuer and the receiver of information is irrelevant*, cvcn in iernis of cost. When we access a page on tlie Wcb, we often don't know where tlie coniputer sending it is located: it could be just a few metres from our own coniputcr. or thousands of kilometres away. The user does not noticc the difference at all and tlie cost is the same. This docs not happen with ordinary mail or the telcphone. where the cost is in direct relation to tlie distancc: tlic further away tlic issuer is froni tlie receivcr, tlie higher the cost.
- *Low costs* Sor studeiits and for tcacliers who generate contents. Since tlic Internet functions like an international co-operativc witliout profit as a niotivating force, wherc cach member only has responsibility Sor tlic maintenance and tlie connection to the closest node, costs are rcduccd Ior all.
- *The Web is a multiplatform and is generally very standardized.* The majority of access software to tlie Wcb — browscrs like Netscapc Navigator, Microsoft Intcrnet Explorer— offer versions for a grcat number of microconiputcr types.

  On tlic other liand, The Web has also acliievcd a high levcl of standardization in tlie cxchange of all kinds of information. Not only are there vcry well definccl standards in the exchangc of texts, so that tlie "spccial" characters of the Spanish alphabet which differ l'roni thc English alphabet — Ñ,ñ,á,é,í,ó,ú,ü,Á,É,Í,Ó,Ú,Ü— can be reprcscnted by any coniputer, but thc same phcnomenon occurs in the transniission of grapliic, sound, and audiovisual inforniation. Thus, students can usc any type ol'cotiiputcr (Wiiidows compatiblc PC or Macintosh) and obtain cqual acccss to information.

- *Web connection for the great majority of research centres and universities.* This is one of the great added values of tlic Wcb. Wc must also remember tliat. for the distance learner, this is oiic oftlic most important factors in ternis of iis contents, in that it gives access to the largest library of electronic publications ever dreanied of.
- *Enormous opportunities for interaction* by means of languagcs like Java, or programmes likc Flash or Macromedia Shockwave. The Web is often considcred a vcry passive means of accessing information. Ilowever. thanks to tlie appearancc of thc programnic languagc Java, highly interactive access to soltware is possible and this is similar to any interactive multimedia siorcd on CD-ROM.
- *Dramatic expansion as a means of universal communicotion.* It seems likely tliat tlie Web will bccoiiic a mcans of communication which is as universal as the fax or the telephone is nowadays in the industrialised countrics.

Although the list of advantages in using thc Wcb for the distance learning of niodern languages could bc further cxtcndcd, we should not overlook some *inconveniences:*

- *General confusion it7 the access to information.* Although thc Web has bcconic. in a few ycars, a standardized means of communication around the world, nevertheless tlie procedure used to acccss multimedia information can cause confusion. The use of hypertcxt nicans that each Wcb page can contain nunicrous links to other pages, and these links are generally indicated with different colours or underlined. As a result. tlie Web is a vcry dcnsc net of information pages which are inter linked by a system of innumerable cross refcrcnces.
- In ordcr to avoid this general confusion it is necessary for tlic design of Web contents to neutralize this tendency to dispersion, and to encouragc linear navigation.
- *Almost absolute predominance of English.* For many studcnts, tlic fact that a vcry high percentage of documents are only in English represcnis a grcat obstaclc to tlic lcarning of foreign languages other than English.
- *Possible use for destructive and criminal purposes.* There is still criticism of the use of the Internet for disreputablc, cvcn criminal, purposes. It is a coniact placc for fascist propaganda, pornography, etc. Given tlic organisational characteristics of thc Intcrnct — rathcr than having a solc owner managing thc contents, tliere is an international co-opcrative wliich is almost cxclusivcly coiiceriicd with tlic tcchnical operation — it is vcry difficult for any iiiitiativc which introducces sonic censure to thrive.
- *Slowness it7 access to the Web.* Due to the vast growtli of tlic Wcb, it is evident that it might bc untimcly iii some cases io talk about inforniation highways, becausc tlic inipression tliat we sometimes have is that these highways are almost always at a complete standstill (which is why wc ironically refer io it as World Wide Wait.).

II. USE OF THE WEB IN CALL

The Web has had different uses in the teaching of modern languages. We can summarise them in three sections:

1. The Web as a source of resources.
2. The Web as a window of multimedia applications.
3. The Web as an e-learning platform.

11.1. The Web as a Source of Resources

In a very short time, the Web has become the largest source of resources for the learning of any foreign language, and it is important to emphasise the following characteristics:

- Most newspapers and magazines in industrialised countries put a free version of their main articles at the disposal of the Internet user. Also, most public and private institutions have their own site on the Web, thereby providing access to any relevant information. This has meant that the feeling of isolation among most teachers and students of foreign languages has disappeared, because they have access to up-to-date information on the country where the foreign language being taught or learnt is spoken.
- Most accessible resources on the Web can be re-used. Thus, both text and images that appear on the Web can be integrated, without major difficulties, in any word processing programme — for example, Microsoft Word —, and the teacher can change them and re-use them for educational purposes, without violating the author's rights.
- Specific access to resources related to certain areas has turned the Web into a primary tool for the teaching of languages for specific purposes. That is the case, for example, in the field of tourism, as the Web allows travel planning, as if it was a real world activity: from the booking of plane or train tickets to the hiring of a car, hotel booking, buying tickets for shows, etc.

11.2. The Web as a Window of Multimedia Applications

The Web has also been used as a *window of multimedia applications*. Thus, it is possible to have access to multimedia applications stored in sites located anywhere in the world from any browser (Netscape Communicator or Internet Explorer), and in this way the CD-ROM is replaced by the Web as the main means of storage of multimedia applications.

Despite the simplicity of this approach, this vision has had both advantages and drawbacks, which we will discuss as follows:

- Being ablc to gain acccss from a browser to any multimedia application in any site on the Internet crcatcs ncw opportunities, because tlie costly distribution of any multimedia application can bc avoided, and also tlie author can distribute and market his or her applications without intermcdiaries.
- I Iowcvcr, not cvcry multimcdia application can be fully accessed from a browser:
  - Internet bandwidth is still limited. As a result, it is still difficult to gain full access to multimedia applications. wliicli generally consunic niany resources, from a browser. This, for example, is the case with video or sound files.
  - The languages that allow tlie production of niultiniedia applications through a Web biowscr (Flash, Director, Java, etc.) have their limitations, even though they are already vcry advanced.

Until the Web has a spccd that will allow us, for example, to view videos on a full screen with a quality comparablc to a DVD and froni any PC, we will continue to opt for hybrid solutions in this type of multimedia application. While tlie larger files, like videos, are stored on CD-ROM, the rest of the information comes froni the net. Froni one browser the user can access a CALL multimedia application, whose inforniation comes froni the net, and its CD-ROM. An example of this is *enREDando* (http://www.cnredando.org; scc *Figure 1*), an application for learning Spanish as a foreign languagc. wliicli is stored mainly on CD-ROM, with contents always vicwcd from a Wcb Browser.

Figure 1. *enREDando*: liitcriict Spanish coursc for foreigners (iiiaiii autlior: G. Ruipérez)

11.3. The Web as an E-leurning Platform

In tlic last fcw years the Wcb has beconie a very useful "telelearning" tool. It is known as e-learning and can be defincd as follows:

> Distance learning characterised by a physical scpnration between tcachers and studciits — without excluding occasional facc-to-facc meetings. Betwccn tcacliers and studerits a two-way asynchronous coiriiriiiiiicatioii predominates, witli tlie liiteriiet as tlic prcfcrred means o f communication and distribution o f knowledge. The stiidciit is at tlic cciitrc ot'iiideperident and flexible training. arid negotiates his/her own learning, generally with tlic help o f cxtcriial tutors.

III. LEAKNING MANAGEMENT SYSTEMS (LMS)

111.1. Definition and Characteristics

For an institution — whether public or private — to create a Virtual Centre for Foreign Lünguage Learning (scc *Figure 2*), certain software niust bc installed in a coniputer connccicd to the Internet. 'I Iiis soliware is called a Lcürning Management System (LMS). We can define LMS as follows:

> Software, generally in tlic form o f an iiitcgratcd package (iiiade o f software units with independent functions), which includes all tlic necessary logistics to bc able to offcr courses through tlic liiteriiet or aii intranet.

LMS have a series of general characteristics tliat define a series of basic training functions (see *Figure* 3):

- Student's personal diüry
- Student's personal details page
- Contents ürea:
  - Contents
    - Course progranine
    - Learning guidc
    - Mosl frequent qucstions
    - Subject matter
    - External materials and rcferenccs

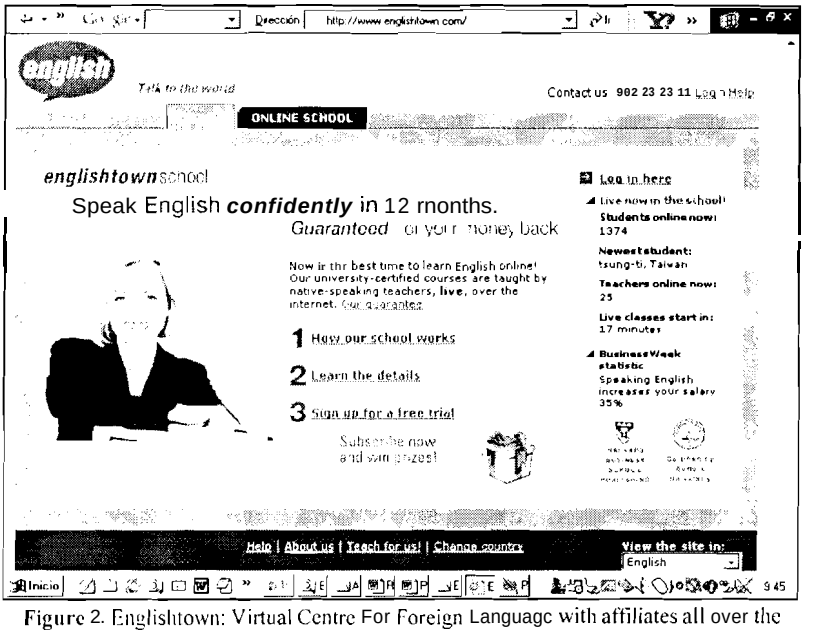
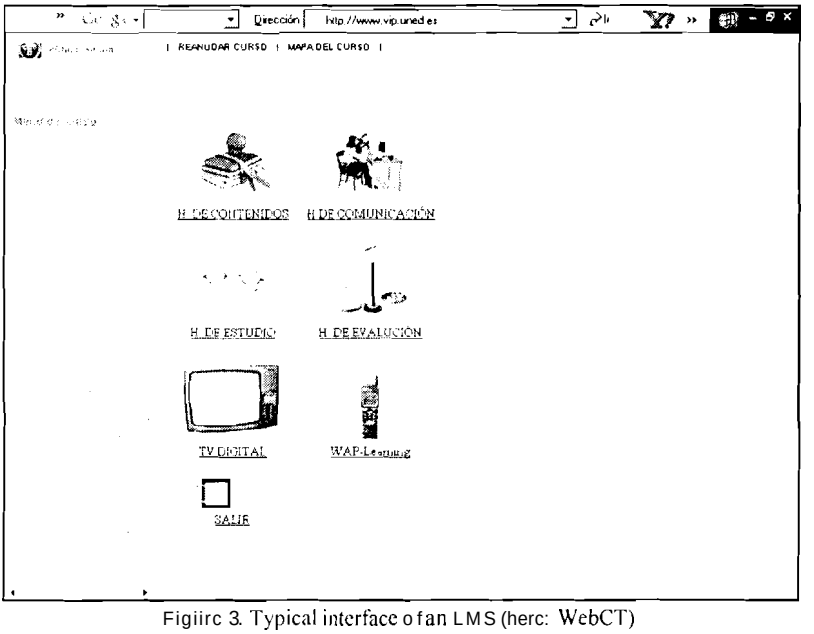


Figure 2. Englishtown: Virtual Centre For Foreign Languagc with affiliates all over the world (http://www.englishtown.com)



Figiirc 3. Typical interface o fan LMS (herc: WebCT)

- Tools for tlie adniinistration of contents
- Contents compilcr
- Autoniatic index of contcnts
- Scarches
- Glossary

- Communications area
  - Personal e-mail
  - Discussion forums
  - Chats
  - Shared notice board
- Assessment and sclf-monitoring
  - Assessmcnt
  - Writtcn work assessed by tlie teacher
  - Interactive automatic sclf-assessment cxercises
  - Exams or tests (assessed by the teacher or self-assessment)
- Grading of tlie assessnients
  - Issued by tlie tcacher
  - Self-assessment automatically generated by the LMS
- Gciicral sclf monitoring

Apart from thc basic functions of tlie majority of tlie LMS, we should niention below ttie *advanced functions of the LMS* that for the moment only appear in tlie advanced LMS:

- Voice chats
- Digital tclevision channel
- Mobile telephone services:
  - WAP coniplenientary services
  - Acccss to tlie LMS through electronic pocket diaries (PDA)

III.1.1. Basic Functions

The student's *personal diary* is a virtual diary available to tlie student, and it is of great interest, because tlie student can includc in it personal notes (exani dates, holidays, academic days, etc.).

The personal page enables each student to create, in ttie LMS, a Web page presentation, wherc they can include. apart from a pliotograph. personal details of interest to other students.

From the didactic point of view, it is iniportant for tlie teacher to encourage his/her students to create their own personal pagc, so tliat an authentic virtual coniniunity aniong the studcnts can bc achieved, creating a scnse of belonging to a group with similar interests and concerns.

In the electronic *contents* arca of the LMS, the contents are as follows:

- *Course programming.* The coursc programme includes all types of general information about the coursc, particularly details about tlie course tliat sonieone who has not yet enrolled would nced to have a vcry clear idea about it.
- *Study guide or didactic guide.* Onc of tlie keys to the success of distance teacliing through Internet is that thc students have at their disposal a good study guide. This should give thorough information about thc best way to approach learning. A didactic guide generally has the following components:
  - Outline summary of thc coursc contents
  - Distribution of tlic learning time. In this section very concrete and realistic statenients about how tlic student niust distribute his/her learning time must be made.
  - General rccommendations about how to nianage the course as painlessly as possible: Iiow to contact tlic teachcr, liow to overconie difficulties alrcady forcscen by the teachers. clc.

One section of thc contents tliat is widespread in Internet learning is tlie niost frequently askcd qucstions arca. It involvcs a scrics of brief qucstions with concise answcrs, where the niost frequently askcd questions by the students and the corresponding teachers' answcrs are included.

In addition, tlic contents scction contains the coursc electronic contents (text. sound recordings. audiovisual recordings. activities).

In ordcr to nianage tlie course contents stored in electronic format, the LMS frequently includcs *management tools for electronic contents.* The idea is to facilitate access to iniorniation. Among thc most comiiioii tools that tlie student can find are: *contents cornpiler, automatic index of contents, course searches and glossary.*

Aiiothcr group of advanced functions relates to tlie *communications area*, and these are, without doubt, tlie most iniportant functions in any Internet course, since niost are exclusive to virtual courses, and do not cxist in conventional courses. These functions facilitate communication bctwccn tcachcrs and students, and aniong students.

As mentioned bclorc, thc iiiost widcsprcad functions in tlie coniniunications arca of any LMS are thc following:

- Personal e-mail
- Discussion forums
- Chats
- Shared iioticc board

E-ninil is without doubt tlic most used rcsource in tlic LMS, bccause of its countless advantages:

- *It is based in an asynchronous communication system*, which means that tlie sendcr and tlie receiver do not iiccd to bc activc at tlie sanic time for communication to occur.
- *E-mail messages are very simple to write*, since tlie usual convcntions of otlicr media do not apply.
- *No superfluous information*. As a rule, e-niail tcxts arc vcry direct. with little supcrfluous information.
- *High level of grammatical and orthographic freedom*. Whilst in a convcntional lcttcr any crror or spelling mistake can caiisc a bad iniprcssion, there is more tolcrance in e-niails. The abscncc of accents, ñ aiid diaercsis (ü) are not takcn very seriously.

Discussion forums arc rcally asynclironous textual tclcdiscussions, whcrc teacher and student ask questions aiid answcr messages wliich arc stored by tlie LMS, in such a way that any student can answcr or add to any otlicr prcvious nicssage, or make a new comment or question, wliicli thc rest of tlic students or tcaclicrs can answcr or add to if they fccl it is appropriatc.

Written conversations —often known by the original English name of *chats*— are really discussion forums, but they are based in syncliroiious communication, so tliat all participants are positioned at tlic sanic time in front of tlic coniputer typing what they think. However, if wliat they have to sharc is grapliical rather than text based inforniation. thcn they gcnerally usc a "shared iioticc board". This is used Ior a fcw subjccts wliicli require graphical intcraction to explain certain topics.

III.1.2. Advanced Functions

As wc have said bclorc, tlic LMS supply tlie students witliadvanccd Sunctions. wliicli wc can now summarise as follows:

- Spoken conversations
- Digital television channel (scc *Figure 4*)

- Mobile phone services:
  - WAP complementary services (see *Figure 5*)
  - LMS access through pocket electronic diaries (PDA)

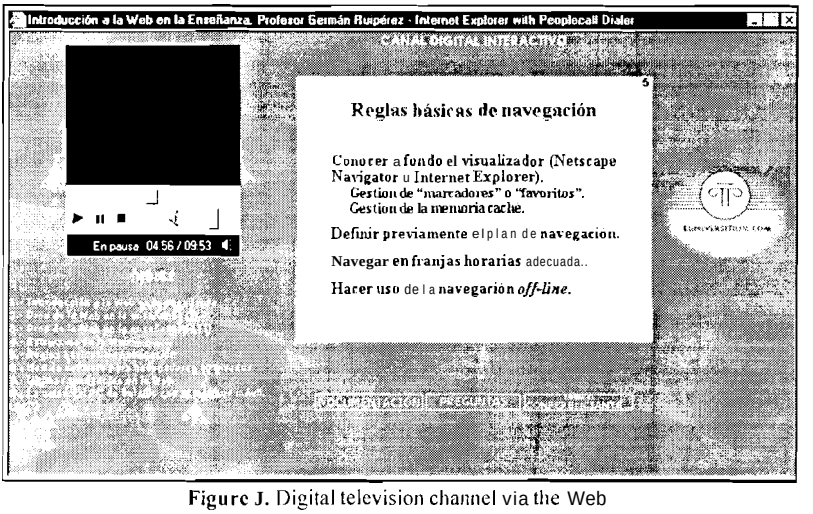


Figure 5. Digital television channel via the Web

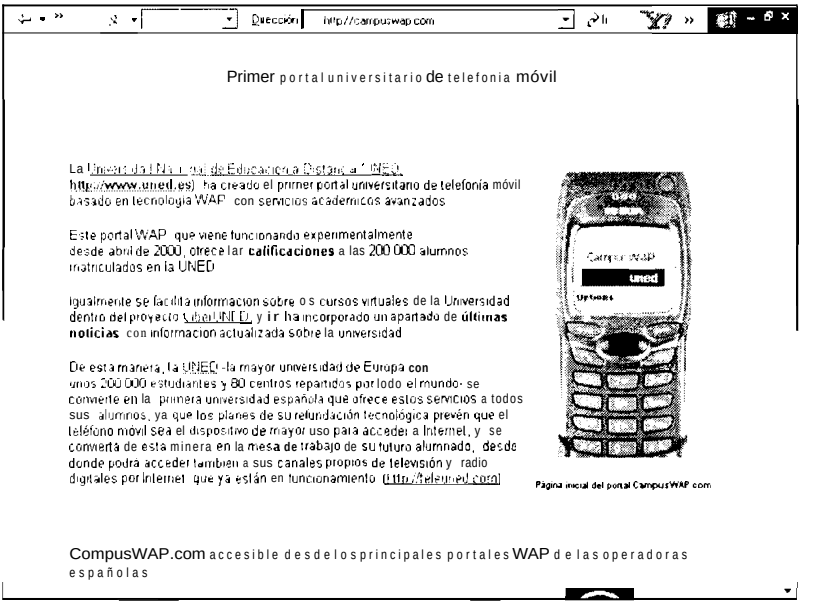


Figure 5. Campuswap.com: Example of e-learning services based on mobile telephony.

Spoken conversations, also known as "*voice chats*", consist of various Internet users chatting simultaneously among themselves, each from their own computer, although, as a rule, the LMS anticipate that only one Internet user speaks, while the others listen.

On the other hand, a function which is on the increase in teletraining is a digital television channel, which enables the student to see and listen to a teacher giving a class from his own computer. On one part of the screen, slides will appear to illustrate the speaker's presentation. In some cases, the student can also send an e-mail to the teacher, so that questions can be asked.

III.2. Choosing the Ideal LMS

There are many comparative studies of LMS, carried out by consultants, specialist magazines, etc. Here are some of those published on the Internet (March 2002), which we recommend:

- *Evaluation of web-based course platforms* (learning environments) (http://www.edutech.ch/edutech/tools/comparison_e.asp), by Edutech.
- *Comparison of Online Course Delivery Software Products* (http://www.*marshall*.edu/it/cit/ebct/compare/comparison.html)
- *Online educational delivery applications: a web tool for comparative analysis* (http://wwwctt.bc.ca/landonline/choices.html), by the Centre for Curriculum, Transfer & Technology.
- *WebEd Tools Chart* (http://www.osc.edu/textonly/education/webed/Tools/chart.shtml), by the Ohio Supercomputer Centre.
- *Evaluation of Web-based Educational Systems* (http://www.abe.villanovaa.edu/proc2000/n115.pdf), by University of Macedonia.
- *WWW Online* Courseware *Development and Delivery Tools: Comparison and Contrasts* (http://www.aum.iawf.unibe.ch/did/didactica/ONLINE_COURSEWARE_TOOLS.pdf).

Despite the proliferation of comparative studies of LMS, they have hardly considered the specific features of CALL software, in which the functions that promote sound interaction should be more advanced.

On the other hand, the subject of standards has become relevant. It is logical that the user who introduces contents into a given LMS would want the guarantee of being able to use those contents within another LMS. This is because he/she might want to change LMS at any time, or because he/she might want to add or offer to a third party the contents of his/her current LMS.

Despite tlic divcrsity of staiidards for LMS, there is a growing tcndency to consider SCORM (Sharable Content Objcct Rcfcrcncc Model) as tlie doniinant standard. SCORM is an initiativc led by ADL (Advanccd Distributcd Lcarning), which tries to draw together the other rival staiidards, likc AICC, IEEE. and IMS.

IV. CONCLUSIONS

Tlic growing usc of tlic Wcb in the learning of niodcrn languages has givcn birth to a ncw discipline, called Wcb Assisted Language Learning (WALL) which can be brokcn down in thrcc important arcas:

- The Web as a sourcc of resources.
- The Wcb as a wiiidow of multimedia applications.
- Tlic Wcb as an e-learning platform.

Tlic arca of WALL most likcly to develop in thc ncxt few ycars is the usc of the Wcb as an e-learning platform. This has alrcady givcn birth to Virtual Centres for Foreign Languages.

The following obscrvatioiis should be niade about tliese Virtual Centres Sor Foreign Languagcs:

- The teaching model they offer will not bc exclusively Wcb bascd. Thcy could also includc phases of face-to-face tuition, wlicn tlic aim is to develop oral skills (listening coniprehension aiid especially speaking skills).
- The use of a particular LMS has vcry strategic iniplications, as it will also determine tlie teaching methodology that will bc implemented.

Therefore, a thorough understanding of tlic basic and advanced functions of an LMS is very important in tlic development of tlic infrastructure of a Virtual Ccntre for Foreign Languages. On tlic other hand, all LMS functions that cncouragc both asynclironous coniniunication (e-mail, discussion Soruiiis, etc.) aiid synclisonous coniniuiiication (chats, videoconfcrencc, etc.) are of great importance in tlic Virtual Ccntre lor Foreign Languagcs, as they encourage inicraction and thc idea of a virtual community.

BIBLIOGRAPHY

AEFVI (ed.): *Virtual Educa 2001. Actas de la conferencia internacional sobre educación, formación y nuevas tecnologías.* Madrid 2001

Autorengruppe E-Writing.de: *E-Learning und Ekooperation in der Praxis.* Neuwied, Kriftel 2002

Bank of America Securities: *The e-Bang Theory.* N Y 1999.

Biiies. A.W.: *Managing Technological Change.* San Francisco 2000.

Bates. A.W.: *Technology, Open Learning and Distance Education.* London - New York 1995

Bear, J. y Bear, M.: *College Degrees by Mail & Internet.* Berkeley, C A 2000.

Bernath, U (e) . *Online Tutorien — Beiträge zum Spezialkongress "Distance Learning" der AG-F im Rahmen der LEARNTEC 2002.* Oldenburg 2002.

Centre for Educational Research and Innovation (CERI): *E-Learning — The Partnership Challenge.* Paris: OCDE 2001.

Collado Medina, J.: "Economic Efficiency in Open and Distiince Learning". In: Ortner, G.E. / Nickolmann, F. (eds.): *Socioeconomics of Virtual Universities.* Weinheim: 1999, p. 139-163.

Criscito, P.: *Barron's Guide to Distance Learning.* Hauppauge, N Y 2002

Daniel, S. S.: Mega-Universities aiid Knowledge Media. Technology Strategies Sor Higher Education. London 1990.

Fundación Retevisión (ed.): *eEspaña 2007 — Informe anual sobre el desarrollo de la sociedad de la información en España.* Madrid 2002.

Garcia Aretio, L.: *La educación a distancia. De la teoría a la práctica.* Barcelona 2001

Harry, K. (comp.).: Higher Education Through Open aiid Distance Learning. London 1999

Hohenstein A. / Wilsberg, K. (eds): *Handbuch E-Learning.* Köln 7002

Hülsmann, Th.: *The Costs of Open Learning: a Handbook.* Oldenburg 2000.

Miisoii, R.: Institutional Models for Viriiial Universities. En F. T. Tschang y T. D. Senta (Coiiips.). Access to Kiiowledge. New Information Technologies and The Emergence of the Virtual Uiiiversiiy (pp. 167-206). Amsterdam 2001a.

Miisoii. R.: Effective facilitation of online learning: the Open Uiiiversiiy experience. In J. Stephenson (comp.). Teacliiiig and Learning Online (pp. 67-75). London 2001b.

Mira Mira, J. (ed.): *Conocimiento, método y tecnologías en la educación a distancia.* Madrid 2000

Muñoz Rodríguez, A. - Morilla Oliva, M. (eds.): *Metodología par la utilización de los sistemas multimedia y telemáticos en formación continua.* Málaga 2000.

Ortner, G.E. / Nickolmann, F. (eds.): *Socioeconomics of Virtual Universities.* Weinheim 1999.

Palloff, R. M. & Pratt, K.: Lessons from the Cyberspace Classroom. Tlie Realities of Online Teaching. San Francisco, C A 2001.

Peterson's (comp.): *Peterson's Guide to Distance Learning Programs 2001.* Princeton, NJ 2001.

Phillips, V y Yager, C.: *Tlie Best Distance Learning Graduate Schools.* Princeton, NJ 2000

Román, E.: "El aprendizaje interactivo virtual del español coiiio lengua extranjera: retos. estrategias y aplicaciones". In: Revista Interamericana de Desarrollo Educativo: La Ediicacióii, 2002a, 138-139.

Ruipérez, G.: "Formación a distancia o la formación del futuro". Eii: Anuario de los Teiiias y sus Protagonistas 2001. Barcelona 2001.

Ruipérez, Ci.: E-Learning y formación virtual. Madrid 2002

Ruttenbur, R. M!.. Spickler, G. C. y Lurie, S.: eLearning. Tlie Engine of the Knowledge Economy. (White Paper). New Yoi-h 2000.

San José Villacorta, C.: *Tecnologías de la información en la educación.* Madrid 1999

San Martín, J.: Enseñanza presencial, enseñanza a distancia y enseñanza virtual: costes y beneficios. Murcia 2002 [manuscript]

S io, J.: *La virtualización de la universidad.* Caracas 2000

Silvio, J. Universidades Virtuales en Iberoamérica. Actas de la Conferencia Virtual Educa 2001 (pp. 134-149). Madrid 2001.

Simonson, M. e.a.: *Teaching and Learning at a Distance. Foundations of Distance Education.* Upper Saddle River 2000.

Stevenson, N.: *Distance Learning Online for Dummies.* Foster City, C A 2000

Telefónica (ed.): *La sociedad de la información en España — Perspectiva 2001-2005.* Madrid 2001

Thompson, G.: Unfulfilled Prophecy: Tlie Evolution of Corporate Colleges. Tlie Journal of Higher Education, 71 (3) 2000.

Turlington, S. R.: *Tlie Unofficial Guide to Distance Learning.* Foster City, CA: 2000.

