Multimedia integration for language e-learning: Content, context and the e-dossier

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Abstract: In the education world, it is widely accepted that language learning is one of the pioneering disciplines in the application and use of the information and communication technologies, initially preceded by the widespread use of audiovisual resources which, finally integrated in the digital space, bring about the use of multimedia. Additionally, language learning has greatly contributed to standardizing lesson plans. They set the basis for learning design, one of the last advances in the pedagogical organization of education through the use of computers in learning managing systems. Most recently, language learning has also played an innovative role in the implementation of portfolios to education. These three perspectives address different issues for e-learning: the access to content through technology; the design of the learning initially with the help of tutors and then applying institutional frameworks for their own personal learning processes; and the edition of the resulting e-learning experience as evidence with the e-dossier, a part of the e-portfolio. Currently, the web is evolving towards its original function as the read/write web where the user, apart from accessing information, can create their own information and communicate more interactively, using technology-enhanced learning environments to integrate text and multimedia for real audiences both in the classroom and outside. Thus, taking language learning guided by the *Common European Framework of Reference for Languages*, the authors present here a complete e-learning system which integrates textual as well as multimedia facilities to acquire learning content, edit learning design and report learning experiences.

Key words: e-learning; e-portfolio; technology-enhanced language learning; personal learning

1. Introduction

Language lessons have traditionally made use of the multimedia technologies in the classroom and language labs exclusively dedicated to iterative oral activities. They gave rise to the audio-lingual approach, based on conductive methodology, where repetition of drilling exercises in isolation was to be the panacea for learning a foreign language. Learning in this way is proved to be hard to achieve. Then, the communicative approach brought the tape-recorder and the video-player to everyday classroom language activities and they were integrated

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in the classroom environment without much distortion, providing appropriate support to practice more successful communicative skills (Larsen-Freeman, 1986).

Although a broad definition of e-learning refers to new online ways of learning (Towards a Knowledge Based Europe: European Commission, 2002), the LTSN (learning and teaching support network) Generic Centre (2003) defined e-learning as learning facilitated and supported through the use of information and communication technologies. It includes digital content, is experienced through a technology interface and is Internet-enabled (Zastroky, 2000). The authors' vision is more specific. Until recently, e-learning has involved using electronic technologies to deliver learning content. Currently, it also implies making use of interactive learning resources through communication facilities. Clark (2003) pointed out the interaction feature and claimed that e-learning exploits interactive technologies and communication systems to improve the learning experience.

Applying new emerging web technologies with pedagogical purposes for language learning, it can make use of the web to achieve the new engaging learning based on learning design (practicing and developing authentically communicative skills) rather than merely on the access to content (for practice with quizzes and comprehension questions). While face-to-face communication seems more natural for spoken interaction, online environments are becoming effective for learning mainly through reading, writing and audiovisual interaction. All these can be accessible inside and outside the educational centre, in courses where the learners' physical presence is not required, such as in distance education, as well as in face-to-face courses with tasks assigned for homework even if the learners cannot be present in the classroom due to whatever circumstances. If the online participation is taken into account in advance, a blended learning course can be designed with some activities at distance and others in face-to-face classes under the monitoring of the tutor in the same physical environment. What is more, this opens up the possibility to let learners organize their own learning and practice on their own or in groups, forming communities of learners who share the same interests in specific disciplines or areas of knowledge. The communication facilities provided by such a system would allow the learning experience designed by the tutor in the technology-enhanced classroom to be also accessible anywhere anytime, thus creating an appropriate environment for the wide-range of perspectives of blended learning (Valiathan, 2002; Driscoll, 2003; Oliver & Trigwell, 2005).

Any learning environment should integrate a set of language tools or other reference materials to help learners write naturally accessing information and reference works and collaborating, as it is usual in the real world when communicating formally. As a result, learning would be achieved by using communication devices, sharing resources and information and collaborating in authentic contexts, as a reflection of the learners' future working life. To do this, not only textual (written) information would be appropriate, but also writing and editing tools (including easy multimedia integration) would be of great help, both for adding and accessing audiovisual content as well as contextualizing the design of the learning tasks and activities.

Furthermore, this learning situation can extend into informal learning environments and practices, allowing users to become permanent learners who, after an initial stage of being guided to learning with technology, will be able to design their own learning plans and make use of the web as a social network for accessing information, publishing their achievements in e-portfolios and sharing their learning experience with others by writing about their own learning experiences and thoughts, using micro-resources known as widgets, wikis, blogs and podcasts, on what the Web 2.0 (O'Reilly, 2005) or the read/write web has been termed for their lifelong learning.

2. Integrative technology for technology-enhanced language learning

Basic interactive communication on the web with forms and forums has been improved with new technologies for writing on the web: wikis and blogs (Fichter, 2005). These can make web pages into writing surfaces to publish information. Technology facilitates an integrated learning model (Mason, 1998), full of resources, based on interaction and work in group with material adaptative to the learners' needs and the evolution of e-learning environments.

An integrating model of technology-enhanced language learning (Warschauer & Healey, 1998) embeds appropriate tools to practice and develop the various language skills using the technology in the language learning process. This seems to be the real communicative framework for language learning, which Warschauer (1997) called integrative CALL (computer-assisted language learning). It could also be referred to as integrating model of TELL (technology-enhanced language learning), since it is not the computer, but the use of the technology with ubiquitous facilities (portable devices and wireless web accessibility) that allows and adds an extra value to the learning environment. It integrates the various authentically communicative language skills (e.g., speaking, listening, reading and writing), using the technology into the language learning process. As Warschauer and Healey (1998) reported:

> In integrative approaches, students learn to use a variety of technological tools as an ongoing process of language learning and use, rather than visiting the computer lab on a once a week basis for isolated exercises (whether the exercises be behaviouristic or communicative).

The web is thus being transformed from what it has initially become, the so-called "read web" to the "read/write web", which was in fact the original vision of Tim Berners-Lee (1999), the web founder. The web can be used as an e-learning system for reading and writing texts, and uploading and accessing multimedia in an online collaborative learning environment.

A series of frameworks and models help to structure this kind of learning with technology (Laurillard, 1993; Kearsley & Shneiderman, 1998; Britain & Liber, 2004; Wilson, 2005; Johnson, et al., 2006). Kearsley and Shneiderman (1998) emphasized the multisensory feature of using multimedia for engaging learning, and Johnson, et al (2006) gave prominence to the role of multimedia resources in a personal learning environments model (Ortega, Sanchez-Villalon, P. & Sanchez-Villalon, A., 2008).

2.1 Developing skills and learning content

The web is the largest repository of content and its original functionality was to provide access to materials located in servers: This has been the core strategy for e-learning. However, the web is becoming more versatile. All the new interactive web functionalities can be organized in services offered to web users. If it can design an interactive environment with a learning objective, it can develop an effective e-learning appliance. An appliance comprehends several aspects such as the technological infrastructure required, the organization or planning of its use and, what is becoming more important, the underlying principles for its effective use.

While oral interaction is practiced in peer-to-peer language activities, and reading and listening can be practiced on the "traditional" web, a new system would facilitate web-based writing both in an independent way and in collaboration. It would allow learners to write their own texts or participate in collaborative projects, possibly tracking every learner's actions and contributions for the tutor to monitor and finally assess the writing activity. This interactive online service can be developed initially for language learning to learn how to write by writing, and later it can be extensible to other disciplines, since writing helps to effectively internalize the

knowledge acquired from access to and interaction with any kind of information. The facility of writing on the web has been the basis for the development of AIOLE (an interactive online learning environment), which facilitates learning to write by writing on the web with AWLA (a writing e-learning appliance). With the features for collaborative interaction using web technologies, the learning system can be transformed into a read-write surface not only for learning but also for easily editing and designing learning with multimedia resources to report about learning on an e-portfolio with an e-dossier throughout the learners' life.

AWLA (Figure 1) offers some resources (Ortega & Sanchez-Villalon, 2005) such as language tools (a dictionary and access to online dictionaries), grammar analysis at a basic level, a WordNet search facility, a single word translator and a lexicon, accessible from the toolbar in a secondary window (as shown in Figure 1) and communication tools (a web-based simultaneous and permanent chat), text and multimedia file uploading facilities with their automatic visualization, all of which can form part of the set of widgets a PLE (personal learning environment) needs, as Johnson, Liber, Wilson, Sharples, Milligan and Beauvoir (2006) referred in the patterns for a PLE reference model. AWLA can be used as one of the resources to count on in the most recent evolution of learning environment for lifelong learning.

Figure 1 AWLA with language tools and multimedia facilities

Figure 2 Integration of AWLA in Moodle and in Google pages

AWLA can be easily integrated through a form button or textual/image link in Moodle, so that the user can open the integrated resource for writing on the web in an embedded window. The same technique has been applied in Google pages (Figure 2).

The research has extended into the development of an interactive online learning environment (AIOLE) based on this facility of writing on the web, which allows the design of the learning by the teacher or tutor and by the learners themselves, facilitating a truly learner-centered learning environment and advancing to the future lifelong learning tendency.

Obviously, the integration of AWLA in AIOLE is complete since the latter is an evolution of the former (Figure 3).

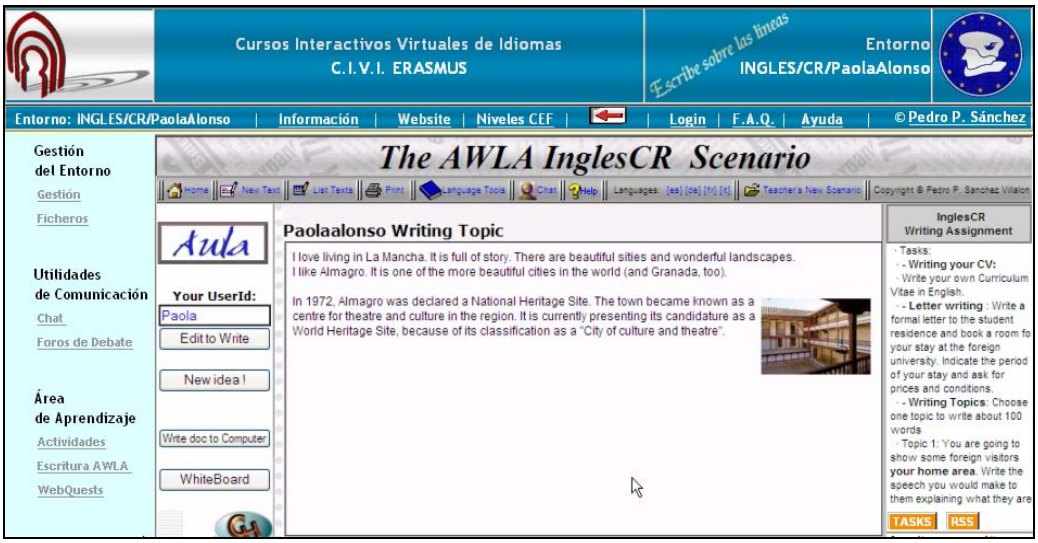

Figure 3 Integration of AWLA in AIOLE

Then, derived from the AWLA facility to write on the web, the blog-like AIOLE provides access to this learning content in the way of LMS (learning management systems), with activities designed by the tutor or copied and pasted from the web.

2.2 Designing learning tasks

AWLA leaves the learning design to the tutor or any user with a similar role who is capable of designing the guidelines for a writing assignment. This is possible after they getting accustomed to using the AWLA system a number of times or having the learning experience of using the CEFR (Common European Framework of Reference for Language Learning) descriptors (Figure 4) or the ACTFL (American Council for the Teaching of Foreign Languages) guidelines offered by the system when creating a new writing scenario.

Additionally, AIOLE also offers a set of resources and services which allow the planning of not only writing but fully skill-based learning activities designed initially by the tutor, and then, in a progressively more independent and informal way by the learners themselves on a lifelong learning basis.

Centered on these Web 2.0 capabilities, the authors first developed AWLA, a wiki-like system to learn how to write by writing on the web both individually and in collaboration. It allows the tutor to design the language learning task to develop the appropriate language skills with the help of certain educational reference frameworks. Following these reference models and choosing language learning strategies for reading, writing, listening and speaking from the range of some institutionally-established pedagogical frameworks available, such as the CEFR

(2001), the USA ACTFL (1999) or others (the Canadian Language Benchmarking—CLB, and the Australian International Second Language Proficiency Rating—ISLPR), the authors have developed really user-centered language learning environments. Here, the tutor can design the language task or assignment and the learners can initially be guided by the tutor to design their learning plans. Later, they can continue their training by designing tasks and practicing strategies on their own just by referring to the language framework available on the system and the great number of language activities on the web (Figure 4).

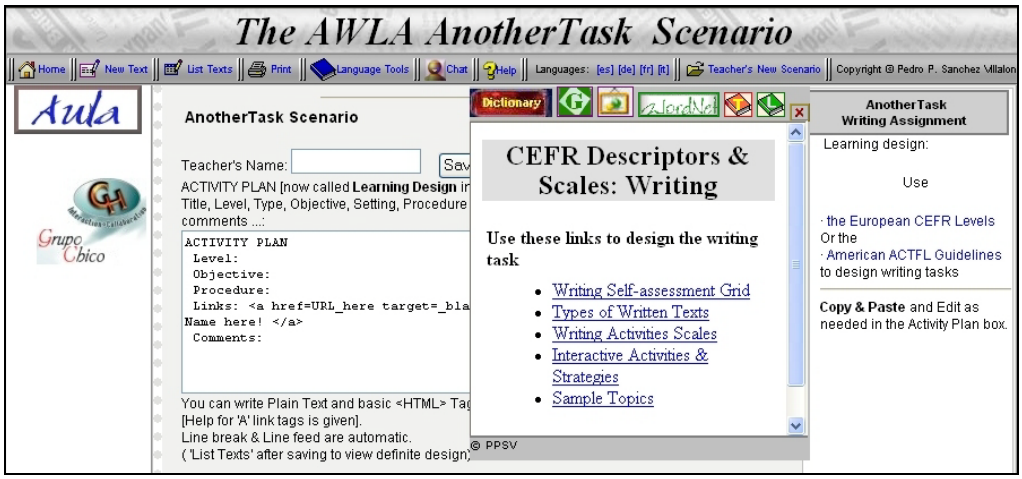

Figure 4 AWLA scenario edition with access to CEFR and ACTFL guidelines

2.3 Integrating tools for personal learning

Under the new modes of learning based on the new e-learning paradigm, learners are the main developers of their knowledge construction and tutors should guide them in the process. To do this, learners should have the possibility to get access to all the information that they need, and tutors should provide them with strategic resources and appropriate pathways to select and experience the knowledge by interacting with information and others, thus help them later develop creative thinking in every chunk of learning in an independent way.

Although the objectives of AWLA did not include the functionality of being used for personal learning design, AIOLE was developed with that goal in mind. The authors provided the system with the set of services and resources necessary for personal learning following the PLE reference model (Johnson, et al., 2006) and could give support for that learning in a progressive way since the design is established in a scaffolding way: the design of the discipline syllabuses as determined by the educational authorities or institutions (CEFR for languages and ACTFL). Then, the staff department guidelines can help determine the topics and the notions to apply. The particular tutor can make use of these to design the learning activities and the learners can use them, too, to design their own particular activities and give a report of their learning track (which leads to the e-portfolio initiatives; see e-dossier section below). AIOLE also has a set of web-based communication tools (web-based chat channels and thematic forums), information management, exploration and creation and design facilities, all integrated in the PLE environment at different levels. And all these can be done mainly by writing in the online learning environments provided by AIOLE (Figure 5).

AIOLE has some features that are characteristic of LMS: file management (offering access and uploading capacities), communication facilities (such as chat/forums), time organizers (with an agenda) and the possibility to track the users' actions. It also provides some online learning environment and personal learning environment

features to help learners take control and manage their own learning: using WebWriter 2.0 for editing tasks, activities and rtf/html files on the web, using AWLA integrated to practice writing and listening with multimedia management, and using the e-portfolio edition (Figure 6) and management, where the learners can design their own learning path, their curriculum vitae or language passport, and their e-dossier, with access to scanned, uploadable certificates and pictures, audio and video files.

Figure 5 AIOLE sets of services for learning

2.4 E-dossier

AIOLE serves the current trends of personal learning environments, where the learners control their own learning in a final stage, designing their own learning paths (following super-ordinate institutional learning objectives and e-portfolio practices), searching for learning resources and communities to share their interests to accomplish their learning needs, giving adequate relevance and structure to informal learning to include in their lifelong learning process.

The EPL (European portfolio for languages) appeared in the year 2000 as a precedent for the CEFR. The three components of the EPL (linguistic biography, Europass and dossier) were mainly respectively based on the reflect, connect and collect principles, though they all share part of each principle. Soon most textbooks introduced the linguistic biography for reflective self-assessment in the final part of each lesson unit or section and it took the main name of “portfolio” maybe due to the fact that the “raison d’être” of a portfolio is reflexive learning. But the most successful was the Europass (the Europass language passport), a kind of document which the learners use for communicating their language abilities and competencies in a standard and normalized format following the language levels and descriptors established by the CEFR. Following the Europass style, the Europass CV (curriculum vitae) has extended for the standardization of the users’ experiences in all their abilities, skills and disciplines other than languages. Looking for some standard reference frameworks in those disciplines will help extend the effectiveness of this innovative resource again which are first provided by languages.

The portfolio and the Europass components have been translated into a digital form (both on CD and on the web) and can be easily created and updated. However, the dossier component is harder to be seen as transferrable in an electronic way. Innovation and creativity are required for the wide use of the dossier in a digital online format. The authors have developed the e-dossier.

With the development of AIOLE, the learners can select the CEFR descriptors to match their learning criteria

and objectives, they can select content initially guided by the tutor progressively in a more independent way, which can give evidence of the learners' language experiences and level of competence. AIOLE offers the facility to edit, access and update the European language portfolio, with the three components in an electronic online way (Europass, biolingua and the e-dossier).

Multimedia in the e-dossier can be used to give evidence of the learners' linguistic experiences. Learners can edit the e-dossier uploading audiovisual materials to the system. These materials work as evidence of the learners' achievement, it can also be a demonstration of the product resulting from their learning experiences (art work, audiovisual presentations, etc.) or be official documents which certify their levels of knowledge and experience. They can be pictures taken with their cameras or mobile phones, scanned certificates and diplomas, or previously recorded audio and video files. In AIOLE, a competent ICT (information and communication technology) user can upload them and link to them or existing online multimedia files, easily displaying them embedded when publishing their automatically html-generated web pages. All these can be presented as an evidence of the researchers' lifelong learning experiences.

Thus, based on institutional frameworks for learning, it can integrate pedagogically-driven multimedia to enhance language learning with technology. The writing/reading capacity initially offered by AIOLE can be extended to the development of the listening skill and the viewing and understanding of video files. The initial official learning recommendations and frameworks can later evolve to informal learning environments and practices, allowing users to become permanent learners who, after an initial stage of being guided to learning with technology, will be able to design their own learning plans and demonstrate their own learning experiences.

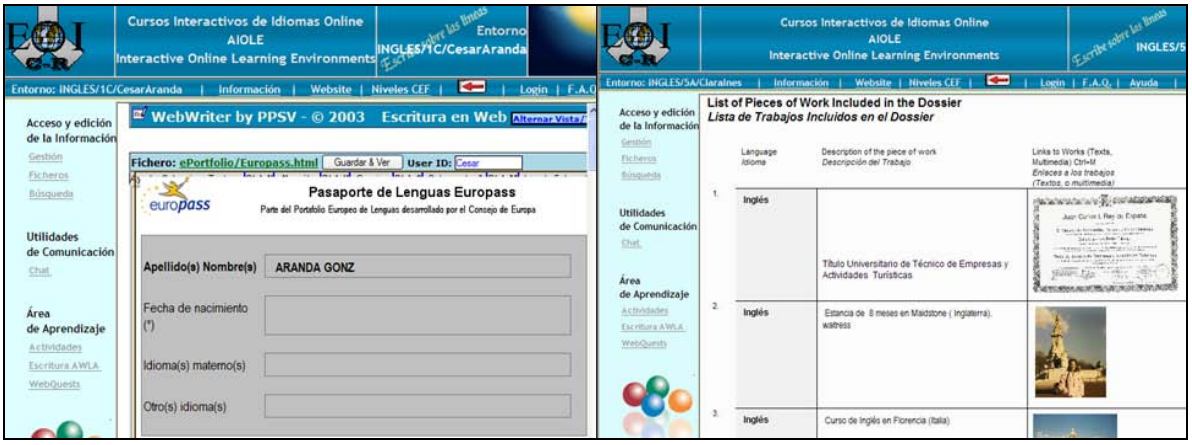

Figure 6 E-portfolio Europass and e-dossier access and edition in AIOLE

By using official templates, AIOLE offers easy e-portfolio edition with the European language passport and a quite innovative improvement: the implementation of a really updatable e-dossier (as shown in Figure 6), with the facility to upload scanned certificates and multimedia files (pictures, audio and video), used as evidence of the learners' language learning experiences. AIOLE, with its capacity to write on the web, tries to integrate all these services and makes the personalized edition of the above-mentioned documents possible. These documents facilitate the selection of evidence and self-assessment (with the Europass) and reflection (in the linguistic biography) from the descriptors analysis of the four communicative language skills established by the CEFR. The most important innovation of AIOLE is the production, not only of the Europass and the linguistic biography in a stable, and simultaneously flexible and adaptative form as a service, but also the edition of an e-dossier as an

electronic dossier, where to include (creating, connecting and uploading on the web) the whole evidence that demonstrates the linguistic experiences of the users by means of multimedia facilities, such as scanned certificates, scanned or digitized photos taken with digital cameras and mobile phones, documents written on the web, sound and visual documents of all kinds. All these are easily done by the users from anywhere at any time with the use of AIOLE systems.

3. Conclusion

An online learning environment offers the opportunities for authentic, communicative language activities. Under this perspective, AWLA has been developed as an e-learning skill-based environment, which integrates communication, information search, language tools and multimedia to help learners write naturally in a collaborative way, as it is usual in the real world when writing formally, and to help the users design learning plans.

Learning to write with AWLA is based on scenarios, integrating the context, with a possibly authentic audience for the purpose of publishing the resulting writings. AWLA and AIOLE help learners in the evolution and evidence of their learning process. All in all, AIOLE makes the traditional learning evolve to online learning, where learners learn anywhere at any time by sharing resources and information, collaborating as a reflection of the future working life of the learners, and participating in the design of their own learning process.

With AIOLE, the learners can also use their own e-portfolio in an easy and updatable way. This is done by accessing the original European portfolio for languages converted in a web-supported digital form. The latest innovation is the capability for the learners to edit and continuously update their own e-dossier, following the standards taken from the Europass initiative. The users can upload their scanned official documents or audiovisual files, and give access to them or existing links on the web, both as a reflection and an evidence of their lifelong learning process. By using the ICTs, learners can follow their learning process and show the achievements as an evidence of their language skills and abilities. That is why this paper focuses on the facilities offered by the e-portfolio in AIOLE as an innovative way for accountability of every learner's learning outcomes through the access to institutional reference frameworks, as well as access to tools which offer multimedia facilities for demonstration of the language skills and experiences. Learners will be able to make use of the web as a social network, accessing information, publishing their achievements in e-portfolios and sharing their learning experiences with others by using micro-resources known as widgets, wikis, blogs, podcasts, on what the Web 2.0 or the read/write web has been termed for their lifelong learning.

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