Virtual language learning environments: the standardization of evaluation

Francesca Romero Forteza
María Luisa Carrió Pastor
Universitat Politècnica de València
fromero@upv.es
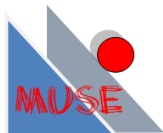lcarrio@upv.es
Tel. 963877530
Fax: 963877539

Abstract

Nowadays there are many approaches aimed at helping learners acquire knowledge through the Internet. Virtual Learning Environments (VLE) facilitate the acquisition and practice of skills, but some of these learning platforms are not evaluated or do not follow a standard that guarantees the quality of the tasks involved. In this paper, we set out a proposal for the standardization of the evaluation of VLEs available on the World Wide Web. Thus, the main objective of this study is to establish an evaluation template with which to test whether a VLE is appropriate for computer-assisted language learning (CALL). In the methodology section, a learning platform is analysed and tested to establish the characteristics learning platforms must have. Having established the design of the template for language learning environments, we concluded that a VLE must be versatile enough for application with different language learning and teaching approaches.

Keywords

standard of evaluation, virtual learning environment, language learning, World Wide Web.

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Romero and Carrió (2014)
Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 135

1. Introduction

The Internet has become a very useful source of information for language learners, as they can obtain information about very specific topics or skills. The digital learning world complements conventional in-person education by providing virtual access to knowledge and other external resources that teachers can include as extra resources. In this way, learners use technology to practise a skill and they learn how to read non-static information from specific fields, searching for information. The growing role of Information and Communication Technology (ICT) on the development of pedagogical issues is worth emphasising. This is changing the role of learners, as they are faced with heterogeneous sources of information as digital information allows them to access knowledge in a variety of contexts (smartphones, laptops, tablets, etc.). This wide variety of educational models that students may encounter creates a need for goals to be prioritized, as the huge amount of information available may lead to confusion. Technological advances have led to the creation of a paradigm with multiple options for the benefit of learners, but sometimes the excessive amount of information may overwhelm them (Barrón 2004).

Conscious of the difficulties learners encounter when looking for reliable virtual language learning environments, this study sets a goal of standardising the learning platforms available on the Internet. In particular, this study focuses on the study of the learning platforms that are offered to language learners. The main objective of this paper is to design an evaluation template that could help learners verify whether a virtual learning environment is appropriate for computer-assisted language learning (CALL). A further objective is to this template on the existing language learning platforms on the Internet to check their efficacy.

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Romero and Carrió (2014)
Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 136

Virtual learning is based on the so-called virtual learning environments, mentioned above, and generally known with the acronym VLE. These are also called learning platforms or systems or teletraining or telematic environments (Majó & Marqués 2002). VLEs are the framework within which online instruction delivery is developed, providing many advantages in terms of the handling and provision of learning materials.

Guitert (2001) defined a platform as the virtual environment or specific tool that facilitates the creation of training activities on the web. It integrates several key tools in one interface so that users can carry out the necessary activities from a single environment. It can also be accessed remotely from any Internet-connected device through a web browser, without the need for the installation of software on the computer; the user only needs to be connected to the server that contains the tool. Content is created and distributed within the environment in HTML format. The platforms are open in the sense that the user can access external resources located on the Internet via direct connections (FTP, URLs, etc.) or navigation tools. These include individual and group communication tools such as e-mail, chat services, shared whiteboards, forums, etc. They also possess file exchange facilities, evaluation tools and also resources for the management and administration of the course by the teacher. In short, a VLE includes a whole range of technological options to facilitate the teaching-learning process.

For example, the first VLE at the Polytechnic University of Valencia (UPV) was merely a repository of the material made available to the student, offering a great contrast with the present version. Now, this consists of a collaborative space containing a wiki in which learners can participate, and synchronous and asynchronous communication tools (the chat service, and the forum and virtual noticeboard,

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Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 137

respectively). There are virtual spaces for file storage, plus a handful of tools for storing teaching materials or create them.

These environments should not imitate the spaces and services offered in the traditional delivery mode (i.e. the classroom) (Guitert 2001). Both environments, digital and classroom, should be differentiated by the way learners by the mode in which learners choose to communicate and the information to be imparted. We should also take into account that VLEs are characterized by constant updating and adaptation due to pedagogical needs and to the evolution of technology. Some researchers have stressed (Babot 2004) that it is important that virtual education is well-organized and delivered effectively and, when it is, it proves to be extraordinarily effective, sometimes even more than classroom training. This author believes that online training in general resolves some problems posed by classroom education, but raises other questions such as: what kind of problems are resolved? Does it benefit a real sector of the population? Can we affirm that there is a demand for its development? Is it really different from traditional education? All these questions are still to be answered, but perhaps some conclusions can be drawn in the near future.

VLE design is a relatively new and quite complex issue, as the task requires the participation of content experts and experts in computer programming. Successful technology-based learning requires the application of proper teaching methods and a strategic plan to enable skills and knowledge to be acquired in an appropriate manner. The effort that the teacher would normally make in the classroom should be invested in the design of the material, the dynamic use of technology and the use of an appropriate methodology.

Different technologies and the different ways of using them now provide a range of options for ICT-based language teaching and learning. The different educational

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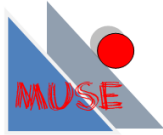Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 138

modes that may make use of technology should take the learning environment into account of the learning environment. An educational mode is the concept that defines the way in which the participants, the roles, the techniques, materials and technology that are part of the teaching-learning process are put together for their interaction and integration into the learning system. Examples include such concepts as electronic learning, computer-based learning, online learning, web-based learning, network learning, virtual learning, community collaborative learning, blended learning, mobile learning, company training, transformative learnig, interactive learning and total learning. These educational modes are described below in detail. The concepts underlying synonymous terms such as educational modes, instructional delivery or delivery mode (i.e. terms which refer to the modes in which the different tools are used) do not constitute teaching methodologies in themselves. Nevertheless, we believe they should be studied in detail as they describe the different modes that can be offered to learners and it is also important to note that the choice of one educational mode or another may lead to different results. In this study, the different kinds of educational modes are important as VLE are used in different educational modes and they are taken into account in the evaluation of VLEs.

Electronic learning, also known as *electronic teaching* or *e-learning*, refers to an ICT-based instructional activity. This educational mode includes learning activities that are designed to be used with computers, mobile phones or tablets and can be accessed via the Internet.

Computer-based learning refers to the instructional delivery in which every activity is carried out on a computer, whether this is guided by the learner, by the teacher or by the machine.

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Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 139

Online learning, also called online education and online training, refers to an Internet-based synchronous or asynchronous learning environment that integrates all the materials, resources and communication tools necessary to produce knowledge acquisition.

Another educational mode is *web-based learning*. This involves the implementation of educational resources through a web server. It is a sub-mode of online learning given that the web is embedded in the Internet.

In *network learning*, ICT is used to facilitate and foster connections among learners, between learners and tutors, and between a learning community and its learning resources (Goodyear 2001). This connection can occur via the Internet, an internal network or intranet. Goodyear (2001) proposes this name to identify this educational mode because it does not necessarily imply interaction with online materials and with other participants. Kern et al. (2008) speak of network-based language teaching with these authors claiming that the educational use of networked devices allows multidirectional communication between the agents involved in the process of teaching and learning.

On the one hand, the term *virtual learning* is used to refer to learning activities conducted via platforms and virtual environments and, on the other hand, to denominate a resource or a service artificially created by analogy with the real world, which is represented by means of a visual system. The most well-known example is Second Life. The first definition is a sub-mode of web-based instructional delivery based as the materials are hosted on a web server and are accessible via a website. However, in the second definition, the virtual world can be online, contained on a CD -ROM or on a hard drive, although this latter case is becoming less common since the current tendency is to update information in the *cloud*. This is the phenomenon known as *cloud*

http://polipapers.upv.es/index.php/MUSE/

Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 N° 1 (2014): 135-152 | 140

computing, the paradigm that offers services and tools through the network without the need for any specific software or storage device. Everything is on the Internet, in the *cloud*. With the aim of not confusing the meaning of this term in this study, we refer to the first definition of virtual learning, which is the most common and widespread.

Another possibility for instructional delivery is *community collaborative learning*, which, according to Casamayor (2008), is the delivery mode which has emerged from the use of Web 2.0 resources. It is based on the principle that the whole is more than the sum of the different parts (Casamayor 2008:197). All the information is on the web and in this sense, the users can access to the content at any time.

Several researchers also refer to the delivery mode known as *blended learning*, a hybrid form which Casamayor (2008: 13) considers to be a synonym for distance learning. Blended learning is defined as the combination of different forms of education that respond efficiently to the training needs of a group of people. In general, it refers to the combination of classroom sessions with the use of electronic resources. It should be noted here that, thanks to advances in ICT, the differences between classroom teaching and e-learning have decreased, as many of the activities that can be performed in the classroom can also be performed online (Davies et al. 2009).

Mobile learning can also be considered to be a delivery mode. It refers to all the teaching activities designed to be delivered on mobile devices such as wireless laptops, mobile phones, tablets or PDAs. The mobile devices allow students to access the information and communication resources from anywhere at any time.

Another educational mode is the *company training*, which can be understood as customized training. It includes the instructional delivery that is designed to address a particular need at a company or public entity. This mode is mainly carried out by means of ICT (Davies et al. 2009).
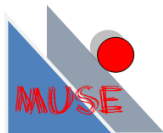
Other delivery modes have been referred to in recent research. One of them is *transformative learning* or *t–learning*. It makes use of Internet-based tools and it focuses on the development of the skills of the learner related to knowledge management. Another recent delivery mode has received the name of *interactive learning*, which involves the use of interactive digital television, a hybrid between television and entertainment, also called edutainment (Pindado 2010). Finally, there is the concept of *total learning*, which expands on the idea of e-learning by taking a global view based on e-learning platforms, social networks and individual learning environments (Oliva 2011).

As we have seen, there are various delivery modes that can be used by language teachers or material designers, but in this study we focus on language learning. We believe that the theoretical background of the design of technology-based materials should be taken into account when evaluating a VLE.

Here, our aim is to focus on *computer assisted language learning* (*CALL*), also referred to as *NBLT* (*Network-Based Language Teaching*), *WELL* (*Web-Enhanced Language Learning*), *ICALL* (*Intelligent Computer Assisted Language Learning*), *MALL* (*Mobile Assisted Language Learning*), amongst other names. In this study, we use the acronym CALL to refer to the technology used in language learning, as this term is currently the most widely used by researchers.

The study of the way in which language learning methodologies are delivered using computers and technology has been a matter of interest to researchers for the last five decades. More recently, the Internet has ensured that the initial focus on the computer advocated by CALL has widened to ICT technology in general. Research into CALL includes material design, the way materials are implemented and the evaluation of the results obtained. This field of study has increased in importance in recent times,

http://polipapers.upv.es/index.php/MUSE/

Romero and Carrió (2014)
Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 142

due to the new resources provided by Web 2.0 and mobile devices which allow learners to decide when and how they learn. Nowadays, most materials are developed for Web 2.0. settings, rather than for standalone computers. Furthermore, technological advances allow language learners to interact and collaborate with other learners, providing a wide range of tools that can be used for practising a language in context – a very important consideration which students find motivating. All this has contributed to a wide variety of materials and language learning courses being produced. We now have different tools that allow learners to access language learning materials and this is the reason why we consider that the name Virtual Language Environments is more appropriate in this study, as the evaluation we propose is applicable to different electronic learning tools.

VLEs are used by material designers to offer language learning courses and we believe it is important to evaluate them by using sound pedagogical and methodological criteria (Nelson 1997; Chapelle 2001). In this way, technology can provide an effective and reliable way to learn languages while using the communicative approach. VLEs are effective teaching tools that facilitate successful language learning and the evaluation of these environments may enable guidelines to be established which web content designers can follow (Romero 2012). Nevertheless, it is important to stress that this kind of material should be used jointly with different kinds of language learning, whether online or based in the classroom (Kern, Ware and Warschauer 2008; Pindado 2010). VLEs should be used as a tool to help language teachers and learners, but they are not more important than the language-teaching methodology itself.

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Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 143

2. Methodology

In order to design a template with which to evaluate the language learning platforms found on the web, we first took into account the characteristics that an effective VLE needs for use in CALL. The template was created after considering and assessing the opinion of the different researchers mentioned in the first section of this paper. The template we propose for this purpose includes 40 items and can be seen in Table 1:

Table 1. Template for the evaluation of virtual learning environments.

Items	Evaluation descriptors of virtual language learning environments	Included
1	The interface is available in the target language being learnt	
2	The homepage clearly presents the sections and resources of the VLE	
3	The structure of the website is logical and easy to use	
4	Students can surf from one section to another of the website and bookmark different parts of the site	
5	Learners know exactly where they are at all times and can surf through the sections and resources without feeling disoriented	
6	The arrangement of on-screen elements is consistent from one section to another	
7	The icons and graphical metaphors are intuitive	
8	The display is appropriately readable	
9	Instructions or a usage guide exists	
10	The functions and activities of the site are self-explanatory or provide the information necessary to execute them	
11	There is a Frequently Asked Questions section (FAQs)	
12	The learner can save work before leaving any section or activity	

http://polipapers.upv.es/index.php/MUSE/

Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 144

13	The tool makes a record of the tasks carried out by the learner when the learning session has finished	
14	There is a possibility of returning to activities by deleting the previous work session	
15	The website has a search functionality	
16	Operative across multiple platforms (PC, Mac, tablets, mobile devices, etc.)	
17	The resource works with any browser (Internet Explorer, Firefox Mozilla, Google Chrome, etc.)	
18	The resource is flexible and is able to accept and respond to feedback	
19	The graphical interface is aesthetically pleasing	
20	The on-screen graphic elements are well-designed	
21	The icons are well-drawn	
22	The screens show a balance between text and images	
23	The needs of disabled people are taken into account	
24	It contains tools for synchronous communication	
25	It contains tools for asynchronous communication	
26	It allows the implementation of various pedagogical approaches (connectivist, constructive, meaningful, collaborative learning, etc.)	
27	Possibility of cognitive autonomy of the student	
28	All the necessary information to complete the course / subject can be found in the resource	
29	All the tools and resources necessary to follow the course guidelines appropriately are included	
30	The VLE accepts various forms of feedback	
31	The resource can record the score obtained by the student	
32	The resource keeps track of student performance	
33	The resource provides opportunities for listening practice	

Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 145

34	The resource provides opportunities for speaking practice	
35	The resource provides opportunities for reading comprehension practice	
36	The resource provides opportunities for writing practice	
37	The resource allows for various learning styles	
38	There is a study guide	
39	The website includes a self-assessment system	
40	The website provides a final evaluation of the student	

Once the VLE evaluation template had been created based on the experiences of previous research, we used it to evaluate different language learning environments. In this paper we present the evaluation carried out on Poliforma-T, a platform used at the Universitat Politècnica de València for interaction between teachers and learners. It consists of several sections: the subject programme, material design, exam design, a forum, a chat service, email, subject management, subject content, uploading of exercises, etc. This platform can be used by teachers and students to communicate and work in a virtual environment. A screenshot of the platform can be seen in Figure 1:
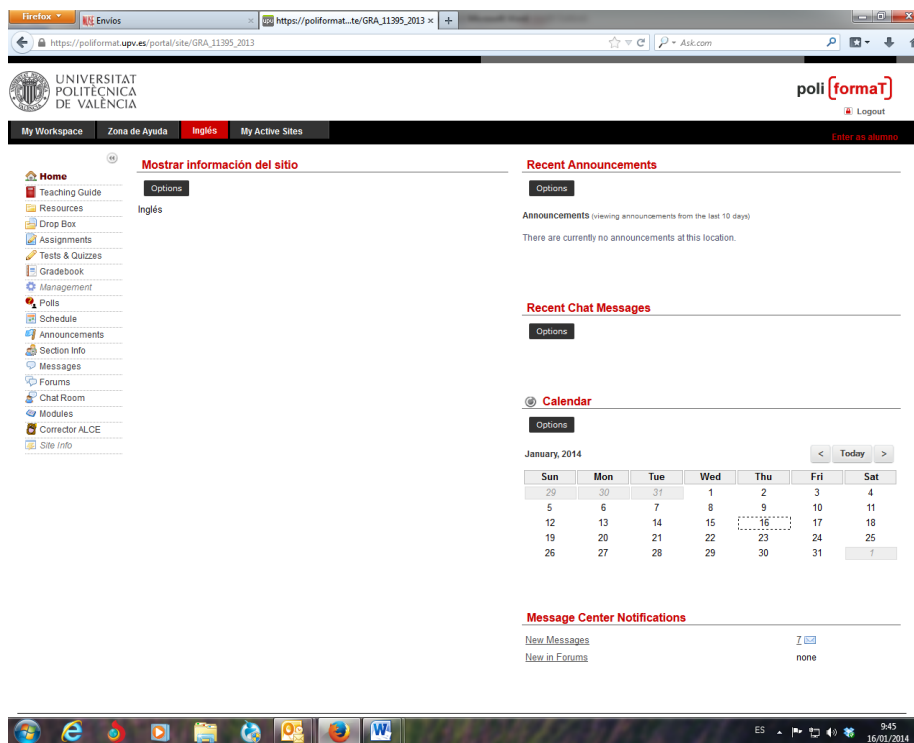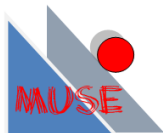
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Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 146

Figure 1. VLE of the Universitat Politècnica de València.

After the evaluation of this VLE, the results were analysed and we considered whether the evaluation template was useful for the generation of guidelines for designers of language learning material.

3. Results

The results of the evaluation of the Poliforma-T platform as a language learning medium are shown in Table 2:

Table 2. Evaluation of Poliforma-T with the proposed template.

Items	Evaluation descriptors of virtual language learning environments Poliforma-T (UPV)	Included
1	The interface is available in the target language being learnt	Yes
2	The homepage clearly presents the sections and resources of the VLE	Yes
3	The structure of the website is logical and easy to use	Yes
4	Students can surf from one section to another of the website and bookmark different parts of the site	Yes
5	Learners know exactly where they are at all times and can surf through the sections and resources without feeling disoriented	Yes
6	The arrangement of on-screen elements is consistent from one section to another	Yes
7	The icons and graphical metaphors are intuitive	Yes
8	The display is appropriately readable	Yes
9	Instructions or a usage guide exists	Yes
10	The functions and activities of the site are self-explanatory or provide the information necessary to execute them	Yes
11	There is a Frequently Asked Questions section (FAQs)	No
12	The learner can save work before leaving any section or activity	Yes
13	The tool makes a record of the tasks carried out by the learner when the learning session has finished	Yes
14	There is a possibility of returning to activities by deleting the previous work session	Yes
15	The website has a search functionality	No
16	Operative across multiple platforms (PC, Mac, tablets, mobile devices, etc.)	Yes
17	The resource works with any browser (Internet Explorer, Firefox Mozilla, Google Chrome, etc.)	Yes
18	The resource is flexible and is able to accept and respond to feedback	Yes

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Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 148

19	The graphical interface is aesthetically pleasing	Yes
20	The on-screen graphic elements are well-designed	Yes
21	The icons are well-drawn	Yes
22	The screens show a balance between text and images	No
23	The needs of disabled people are taken into account	No
24	It contains tools for synchronous communication	Yes
25	It contains tools for asynchronous communication	Yes
26	It allows the implementation of various pedagogical approaches (connectivist, constructive, meaningful, collaborative learning, etc.)	Yes
27	Possibility of cognitive autonomy of the student	Yes
28	All the necessary information to complete the course / subject can be found in the resource	Yes
29	All the tools and resources necessary to follow the course guidelines appropriately are included	Yes
30	The VLE accepts various forms of feedback	No
31	The resource can record the score obtained by the student	Yes
32	The resource keeps track of student performance	Yes
33	The resource provides opportunities for listening practice	Yes
34	The resource provides opportunities for speaking practice	Yes
35	The resource provides opportunities for reading comprehension practice	Yes
36	The resource provides opportunities for writing practice	Yes
37	The resource allows for various learning styles	Yes
38	There is a study guide	Yes
39	The website includes a self-assessment system	Yes
40	The website provides a final evaluation of the student	Yes

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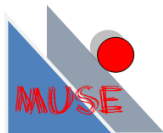Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 149

The analysis of Poliforma-T as a VLE for CALL shows that it possesses almost all of the items included in the template. It does not include a FAQs section, the web has not search functionality, the screen displays more text than images and it does not accept different forms of feedback. Therefore, we can say that this platform aims to facilitate the exchange of information between learners and teachers, but the designer of this platform was not interested in feedback or aspects of the design of the digital environment. The instructional delivery mode of this platform can be identified as online learning as it provides the material to learners, but it is not so interactive as to allow a flow of communication with the participants.

4. Conclusions

We conclude that the frequent use of technology and platforms that aim to help teachers interact with learners and implement different kinds of language learning materials means that the items included in each VLE should be standardized. Sometimes it seems teachers are more interested in using technology than in employing an appropriate methodology, but the latter cannot be ignored. Methodology and technology should go hand in hand in order to be able to provide good materials for language learning, and this process should also be evaluated and the contents revised periodically. A VLE should be a versatile tool able to support different styles of learning and teaching. In this study, Poliforma-T has been evaluated with the template we have proposed and its performance has been quite satisfactory. The platform features 90% of the items evaluated, although it was created to be managed by teachers at the university and some aspects as images, FAQs, etc., have not been included due to the fact that the platform was aimed at internal users. We are conscious that this is an experimental analysis and that the template proposed in this paper should be used to evaluate other

http://polipapers.upv.es/index.php/MUSE/

Romero and Carrió (2014)

Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 150

VLEs: then we may be able to establish whether it could be useful for the improvement of VLEs in general.

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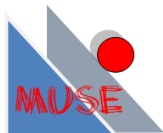
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Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 151

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Mult. J. Edu. Soc & Tec. Sci. Vol. 1 Nº 1 (2014): 135-152 | 152