TIPS T-learning to Improve Professional Skills for intercultural dialogue

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ABSTRACT. TIPS "T-learning to Improve Professional Skills for intercultural dialogue" is a two-year Leonardo da Vinci project co-funded by the EU Lifelong Learning Programme. The project started in November 2007 and will finish in October 2009. The purpose of the project is to support cultural mediators around Europe to improve their skills and competences through the T-learning approach, an integrated methodology exploiting the potential of E-learning, M-learning and TV-learning.
The TIPS T-learning system hosts various tools to encourage both interactivity (e.g. self-assessment quizzes) and interaction (social software). TIPS beneficiaries will benefit from an on-line course supported by a mixed methodology where E-learning is supported by M-learning and TV-learning. The triple system exploits the benefits of distance learning tools and specific learning objects are developed for each tool offering a solution to compensate for any weaknesses that might be present in the other methodologies. Thus ensuring high quality interaction, portability, multimediality, simulations and no limits of space and time. These intrinsic qualities of the TIPS system are expected to positively impact cultural mediators' learning process by promoting customized training able to fit different learning styles.

KEYWORDS: E-learning, M-learning, Mobile devices, Social software STB, Streaming, TV-learning

Introduction

The intention behind mixing the three systems is to continually support cultural mediators' activities, deliver up-to-date information and ensure continuity between work and training. The TIPS project can be considered as an evolution and improvement of another Leonardo da Vinci's project: TALAS. This project, ending in November 2006, combined both an E-Learning and M-learning

platform. Suitable learning objects for the two platforms were able to be realized and developed based on the feedback from the many users, from all over Europe, who experimented with the blended methodology (Mascitti, Funghi, 2006; Mascitti, 2007; Mascitti, Feituri, 2007). One of the main goals of the TIPS project, unlike the TALAS project, is to correctly integrate the TV-learning in the system in order to develop a more comprehensive and innovative distance learning course.

The E-Learning platform, available through the personal computer, have the following features:

- Generally located in a place designated for studying or working;
- The user has close interaction with the device;
- Promotes various possibilities of interaction using a mouse, keyboard, handset, video camera, microphone, etc.

Therefore the E-learning platform is suitable for studying and addressing course contents in-depth, adequate for developing a highly interactive milieu and relevant for using synchronous and asynchronous social software tools.

The M-Learning platform has been created to fully exploit the potentiality of mobile devices and at the same time recognizing its potential limitations such as, a reduced screen size and that fact that mobiles are often used outdoors where students often risk losing concentration due to background noise and other distractions. The most interesting feature of a mobile, however, is its portability, giving students the option to learn anytime, anywhere (Keegan, 2004; Kuszpa, 2005; Farmer, Taylor, 2002; Milrad et al, 2002; Lundin, Nulden, 2003).

Considering these aspects regarding the mobile, specific learning objects were produced that were quite different from those created for the E-Learning platform. In particular, the M-learning platform is divided into a didactic area and communication area. The didactic area contains audio-video lessons suitable for mobile devices or didactic pills, a glossary and a phrasebook, while the communication area provides a chat service and an embedded SMS utility.

The TV-Learning platform, available through the television, is characterized by the following:

- An devise to be used in the living room at home i.e. for relaxing and leisure ;
- A big screen allowing the possibility to watch high quality videos;
- Simple interaction through a remote control i.e. just a few buttons and no mouse.

The TV-learning platform is best used for providing audio-video clips and high quality graphics, as well as avoiding too much interactivity (Bates, Anthony, 1983; Aarreniemi-Jokipel, 2005).

In this paper, the three platforms will be described from a technological and methodological point of view and not for the contents provided in the course. In addition, the paper will describe the back-office area of the three platforms that have been integrated into the E-Learning platform administrative section.

Description of the three platforms

Learning platform

The E-Learning platform is based on the LMS (Claroline Claroline Consortium, 2008). Promoting the following features:

- Allows teachers (professors, lecturers, etc.) to create and administer course websites through a browser (Internet Explorer, Netscape, FireFox, Mozilla, etc.).
- An open source system. This implies that there are no fees to pay for installing it on a WEB server to provide professional E-Learning courses through the internet.
- Written in the programming language PHP and stores data on the database management system MySQL. Both PHP and MySQL are open sources, free to download and are multi platform (it is possible to run these products on servers possessing Windows or Linux operative systems). Anyone who is adequately skilled in using these products can easily improve and personalize the platform.
- Improved and updated every two months by thousands of developers all over the world (working at universities or companies who use the platform) who continuously propose new functionalities or fix bugs.
- The on-line documentation is omni comprehensive and the

official forum solves any problems the platform administrators or users might have.
- Available in 40 languages. It is possible to install the platform once and deliver different courses in several languages.

Figure 1.
E-Learning platform home page

Here is a brief description of the didactic tools available within the platform:

Learning Paths
Learning paths are the most important tools provided to students because they represent the core of the course. Even if Claroline fully supports SCORM compliant Learning objects, we decided to store the traceable learning paths on an Adobe connect server which also provides good LMS features. This decision was made in regards to teachers, who are often comfortable with Microsoft PowerPoint and already have the Adobe Presenter plug-in installed on their computers, and can therefore easily create a highly professional multimedia course or quiz. The author of the L.O. can then publish his or her work on the Adobe connect server in an area called "Content Library" where he or she has been previously authorized by the server administrator to do so. Consequently no technical experts are required and the teacher has full control of the learning objects produced.
The platform administrator uses the didactic materials published by teachers to create fully traceable learning paths on the Adobe server.

A set of APIs provided by the Adobe connect server allows the interface for accessing Learning objects to be fully integrated into Claroline where it will appear as if students are always in the same environment.

The learning paths provide three kinds of Learning objects: audio lessons, lecture notes and quizzes.

The audio lesson consists of an audio explanation synchronised with a slide presentation. The audio lesson generally represents the core of each lesson whilst the other learning objects (lecture notes and quizzes) represent support materials. The audio lesson promotes learning thanks to both visual (text, images, diagrams, movies) and auditive support (the teacher's recorded explanations) that facilitate personalized learning.

Lecture notes foster an in-depth study and detailed information to better illustrate one of the topics addressed during the audio lesson or provide students with a different perspective on the topics previously discussed. Lecture notes offer users familiar materials such as written texts and books.

Users can also take quizzes in an on-line modality and have the option to quickly check their answers.

File management
This tool provides a comprehensive mechanism for organising files and links that a teacher can choose to make available to students. It is possible to create various directories, and to have directories within directories in order to enable the grouping of files. This area has been conceptualized for storing all types of resources that do not have to be tracked by the system.

Discussion forums
The forum is a classic asynchronous communication tool. The TIPS Forum has been set up to encourage communication among users, teachers and tutors and providing the opportunity to post ideas, opinions, and information on the course in an organized manner.

Chat
The chat tool is a popular synchronous communication tool. The forum, however, is more useful for longer threads.

The Agenda
The agenda allows teachers or tutors to insert important course dates, details and a title and description of course events or activities.

Students can also see the agenda featured in 'My Calendar' located on the menu just below the logo of the E-Learning platform. Here the agenda is visualized as a calendar where the event or activity titles and descriptions are displayed by clicking on the respective title.

Announcements
This tool allows teachers or tutors to make announcements such as introducing a new learning tool and inviting participants to use it.
The difference between the announcements area and the agenda is that the latter is more suitable for scheduling events or activities.

Virtual Meeting Classroom
There is a virtual classroom for every partner country involved in the project. It is mainly a synchronous teaching tool, composed of a discussion area where the teacher provides a lesson in video chat modality, a collaboration area containing a whiteboard where the teacher is able to show different concepts visually and a sharing area allows the teacher to share presentations or even his or her desktop.

M-Learning platform

Figure 2.
M-Learning platform home page

Here is a brief description of the different tools available on the M-learning platform:

Didactic pills
Didactic pills represent the most important tool provided by the M-learning platform, and have been produced according to the following criteria:

- introduce new topics relating to the course's didactic goals;
- activate students' interest on subjects and competences featured in the course;
- boost student motivation (ARCS model – Keller, 1987) by enhancing the course appeal, activating cognitive faculties and incorporating students' previous knowledge in order to keep participants stimulated and allow them to fully benefit from the E-Learning course. In addition the course will examine relevant issues and show realistic situations in the field.

Based on accessibility and usability issues, together with the methodological needs of the project, the didactic pill was designated to last no more than one minute with no more than 5 static pictures. Moreover, a page with only alphanumeric characters is considered as a picture, due to the didactic pill format (video).

Figure 3.
Didactic pill

Format container	AVI
VIDEO	
Codec	Mpeg4 (Divx, Xvid)
Resolution, lowest dimension	CIF, 352*288
Bit rate	~ 900 kbps
Frame rate	25 fps
AUDIO	
Codec	MP3
Channel	2, stereo
Sampling rate	16 Bit
Frequency	44100 Hz
Bit rate	~ 192 kbps

Table 1.
Didactic pill's technical
features

Glossary
The glossary is a collection of useful terms with their respective definitions relating to mediation activities. A search engine is provided in order to easily find a specific term.

Phrasebook
The phrasebook is a multilingual tool providing texts and audio files in order to support the mediator during contact with immigrants. The user can learn an appropriate sentence or expression in the immigrant's native language in order to communicate more effectively and engage in a more empathic interaction (Milrad et al, 2002).

Chat
The chat, a definitive synchronous communication tool, is used for real time discussions on project topics and to ask on-line help, if needed, when conversing with an immigrant (Milrad et al, 2002; Lundin, Nulden, 2003).

SMS
An embedded SMS platform was established in order to allow course participants to contact and message each other (Milrad et al, 2002; Lundin, Nulden, 2003).

Technical aspects
We are currently testing the mobile connection of terminals

operating with Mobile Windows 5,0/6,0 OS and Symbian 9.1 OS with two different interfaces: the S60 and the UIQ. The terminals were selected due to the fact that nearly 90% of smartphones are produced world-wide and thus easily available.

UMTS (Universal Mobile Telecommunications System) was selected for the network technology which can be considered as a 3G (third generation) communication for wireless devices.

The most important features of the UMTS network are:

- the transmission speed can reach 7 Mbit per second in download
- the available bandwidth is not shared between users who are connected to the network simultaneously
- always online

Almost all of the countries that are experimenting with the M-learning platform are covered by the UMTS network.

J2ME is the platform used to make M-Learning tools available on mobile devices. Java Platform, Micro Edition or Java ME (often commonly referred to by its previous name: Java 2 Platform, Micro Edition or J2ME) is a specification of a subset of the Java platform aimed at providing a certified collection of Java APIs for the development of software for small, resource-constrained devices such as cell phones, PDAs and set-top boxes (STB) (Farmer, Taylor, 2002) The Java ME source code was licensed under the GNU General Public License and released under the project name phoneME as of December 22, 2006.

TV-Learning platform

The TV-platform will be accessible through the television set which is a familiar instrument allowing users to benefit from high quality images, movies and audio. The TV-platform provides short movies with realistic case studies and practical situations that professional cultural mediators commonly face in the field. Course participants browse the TV-platform using a remote control and can enter different multimedia contents presenting daily situations involving cultural mediators at the workplace.

At the end of each movie, the system gives the student a quiz

concerning the relevant topic. The quiz consists of a series of multiple choice questions that are displayed one after the other on the TV screen. The user is able to answer each question by selecting an item (from the possible answer list) using direction buttons and then pressing the OK button. The system will then provide a prompt response regarding if the answer is correct or not.

Unlike the highly interactive milieu of the E-learning platform, containing a mouse and keyboard, we have deliberately avoided creating too much interactivity for the TV-platform by making the remote control the only peripheral input available to the user. This developmental strategy is coherent with the aim of the TIPS project that is to fully exploit the potentiality of each device and to design different learning tools for each of the three platforms (Bates, 1983; Aarreniemi-Jokipelto P., 2005).

Figure 4.
TV-Learning platform home page

Technical aspects

All audio-video materials are provided to users in a streaming modality.

Streams are a time-based flow of synchronized audio, video, and/or data messages that flow from client to server or from server to client. Streams use a publish and subscribe model that simplifies the development of the applications that use streams. A published stream can be played in real time (e.g. a video chat application) or recorded and played later as in the TIPS project (e.g. video on demand).

     - The streaming server

The Streaming Server manages the video streaming of the courses available on the IpTv channel. The streaming server for the TIPS project require a Windows Server 2003 (Enterprise in case of Multicast), Windows Media Services, the use of the MMS protocol, HW specifications (the basic OS) and a connection to a Public IP.

- Video Management

The video management sequence is as follows:

- Acquire the video file (Video format WMV or AVI, Resolution 640x480 or 720x576, Frame rate: 25 fps and Bit rate 750 Kb/s or higher);
- The video file containing these characteristics will be then coded in WMV format through the MS Windows Media Encoder software. Once the coding is completed, the video file will be imported on the streaming server;
- Upload videos on the streaming server (to the appropriate folder) will be carried out according to modes and configurations specified by the server administrator (e.g. via ftp);
- Once the coding procedure and the upload onto the streaming server are completed, you will be able to extract the URL of the video and place it on the platform Back End;
- The file URL will be: mms://YourWebServer/Path/YourFile.wvx

- The set top box (STB)

The IP-TV channel can be viewed through a Set Top Box, which is connected to the internet and the TV permitting users to view and navigate course contents via a remote control.
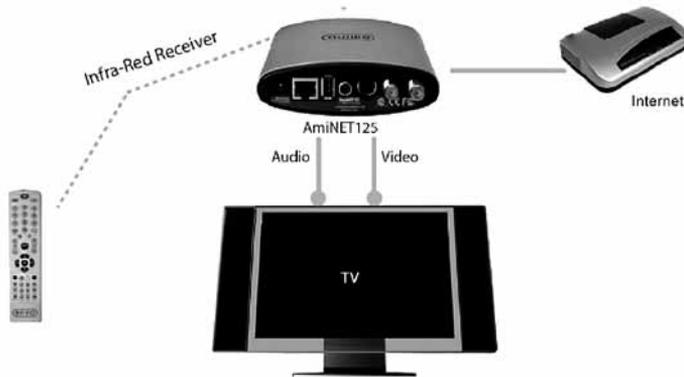
The AmiNET 125 Set Top Box was selected for content navigation. Details on the AmiNET 125 can be found on the manufacturer website: http://www.aminocom.com/products/ipstb/aminet125.html

Back Office

The administrative section of the three platforms is based on Claroline which disposes of a complete, user friendly back-office area. Some modules concerning the M-Learning and TV-Learning have been added to make a comprehensive and unique back-office section. These new modules have been developed in PHP as the E-Learning platform to ensure cohesion and improve the Claroline base version. In addition, the M-Learning and TV-Learning platform data is stored on new tables integrated into the MySQL database of the E-Learning platform. Another distinct aspect is that the user management is unique for each platform, thanks to the back-office integration.

Figure 6.
T-Learning administrative section
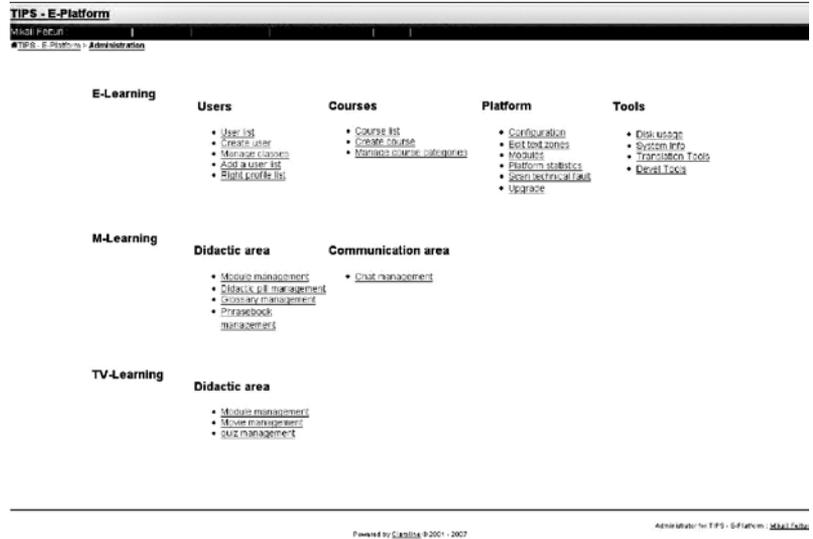
Conclusion

The triple learning system will be experimented by an international target group consisting of about 100 cultural mediators and social workers from five European countries: Italy, France, Austria, Greece and Poland. The pilot course will commence in February 2009 and finish in June 2009. Users will benefit from the innovative system by autonomously accessing the multimedia contents and interacting with tutors and peers to enrich theory with practical experiences on the topic. Upon the completion of the pilot training course, participants will be asked to fill out a satisfaction questionnaire containing closed and open questions to evaluate the t-learning system effectiveness. In particular, the participants will be asked to give their opinion on the usefulness of the triple system on a whole and the effectiveness of each learning platform and learning object provided. They will give feedback on the combination of theory and practice, synchronous and asynchronous interaction, as well as autonomous and collaborative learning. The information collected through the questionnaires will be processed and used to improve the pilot system in order to adapt the experimental demonstration approach into a valuable approach available to social workers in Europe. Furthermore, the analysis of the experimentation results will help partners consider the prospect of applying the triple

technology and methodology to other sectors for professionals who can benefit from the flexibility and convenience of an on-line training program and do not intend to give up their physical mobility but want to be always "on-line". The experimentation and feedback from course participants will ultimately allow partners to decipher if the model will be able to satisfy the needs of the increasing number of professionals who require:

- Efficiency, in terms of possibility to personalize their own training path;
- Flexibility, the possibility to benefit from the course available "anytime, anywhere";
- Wide accessibility and prompt usability;
- Autonomy and respect for their personal commitments;
- Access to real time information in order to make appropriate decisions.

In conclusion, we can affirm that the main objective of the experimentation is to identify the strengthens and weaknesses of the t-system in order to make appropriate improvements in order to achieve both an extensive course for cultural mediators and social workers in Europe and to transfer and apply the system to other sectors where professionals require continuous and flexible training options.

The experimentation is supported by effective dissemination and exploitation activities based on the different stages of the work programme in order to establish relations with key stakeholders and promote the results on a wide scale. All partners are actively involved in the production of the multilingual informative materials, participate of international workshops and organize local meetings to ensure the visibility of the project's objectives and results at a local, national and international level.

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