

Methodology and tools in distant education for migrants

Citim: an e-learning tool to allow immigrants to understand the working world better.

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Abstract

This document presents “Citim”, an e-learning tool developed in 2003-2004 in the frame of the Leonardo AITO project. Citim refers to citizenship and immigration, “citoyenneté” and “immigration” in French. It is freely accessible on <http://citim.velay.greta.fr>. In this document we present the methodology used to build this training material emphasizing its focus on open and distance education.

1. An electronic learning tool to meet training requirements

1.1. Objectives

The main objectives of the e-learning material developed in the frame of the AITO project were determined after a requirement analysis. This analysis has been based on questionnaires and interviews among local/regional actors involved in immigrants integration and completed by a survey of existing learning materials. The objective is to train immigrants about the French working context and provide them the relevant information with local adaptation and real life material. An organisational objective is to facilitate the individualisation of training by providing trainers a support to manage individualised heterogeneous learners in workshops-like learning environments.

The tool had to take into account the following conditions:

- organisational conditions such as the learning time, the location of the learners, the number of learners, the learner’s level within a group, the presence or the absence of a trainer;
- objective requirements of different learners as far as job requirements and personal backgrounds are concerned;

- specific local conditions like regional support possibilities or local contacts;
- subjective pre-conditions of the learners as far as their level of French, their mother tongue, their age, their general level of training, their practice of computer terminals, their job requirements, their cultural background or their learning objectives are concerned.

In addition, the learning material had to fulfil second level objectives:

- be scalable and upgradeable (the number of units/topics, tests, the length of text... are not predetermined and can change);
- to support adaptation and localisation (e.g. to include local information) with easy update;
- to support other target languages and/or real life communication situations (e.g. at the doctor’s, at the post office...);
- to motivate the learner;
- to be easily transferable and to have low reproduction costs and to be easily disseminated;

1.2. Target groups

Target groups are immigrants with an intermediate level in French. The tool developed and tested in the frame of the AITO project is more specifically targeted to North-African and Turkish immigrants. Oral support is provided (up to now) in Turkish, Dialect Arabic and Berber. This oral support is important for those whose culture is mainly built on oral communication. It helps crossing the bridge to written communication.

Citim is mainly built for training centres or mediated contexts but is also usable on an autonomous, free base.

2. Content and organisation

2.1. Composition of a learning unit

The content of a learning unit is entirely related to one topic and is composed of two main parts that can be studied apart or considered as complementary (the second one comes after the first one). The objective of the first part, built on a dialogue and offering live sound records, is to give a first overview of the related topic. It is focused on the acquisition of the basic vocabulary as well as understanding the basics of the topic (e.g. main argument, problems raised, reasons why, evolution...). Grammatical construction is simple. The second part gives detailed information about the topic on an exposition mode. Everything important is explained. It requires a better level of French. Vocabulary and sentences are more complex, but they remain accessible and target intermediary levels.

Composition of the first part:

- A dialogue (male & female) (French text and French audio version);
- The narrative form of the dialogue (French text, Dialect Arabic, Berber and Turkish audio version - integration of other audio versions is easy);
- A comprehension test (French text and French audio version), MCQ type.

Composition of the second part:

- Information (theoretical and practical) on the topic addressed by this learning unit (French text);
- Complementary information (Web links), useful forms or models (like PDF files) to be used by the learner in real life situations;
- Localised resources adapted to the administrative location of the learner (contacts, addresses...);
- A comprehension test (French text), MCQ type.

Up to now 22 learning units are built on the above model. They give a comprehensive overview of the work context through legislation and organisation. The localisation is made for the Auvergne region and its four sub-administrative areas (“départments”) with answers to questions like “where to get local support about contracts?” or “where is located the employment agency?”. But based on a collaborative process, *Citim* allows any training organisation interested to enter the data corresponding to its geographical location (whether it is located): then any organisation from the same area can benefit from it.

2.2. Learning management system

A learning management tool has been designed to help the trainer in building a learning path adapted to his specific target by selecting and ordering among the 22 learning units. The second step is that the learner work autonomously with *Citim* while the trainer can pay better attention to other learners. In the beginning of a training session, the trainer can design several training paths for different learners: the condition is that they have an individual access to a computer.

The construction of individualised learning paths starts by the selection of units according to the learner's needs or focus. Once a unit is selected, the system advises to select the logical following one(s) (in bold). Selected units are displayed separately and it is always possible to change the selection or modify the order. Then according to the French level of the user, the tutor can choose or not to display the narrative form, the audio version, the complementary information, etc.

To make the set-up simpler and to spare time, three levels are pre-selected (low, intermediate, high). They can be chosen by a simple click in the “profile” box. Then *Citim* displays only the “necessary” information and support. E.g. it is not necessary to give access to the full theme development if the learner level is low; it is enough to let him practice with the dialogue and the questions related to the dialogue (this part gives already some useful information about the selected topics). This feature is also linked to accessibility: there is no need to confuse the basic learner with too many options and icons and more generally too many choices.

When the learner has finished the learning path, a summary is available for him/her and for the trainer (time spent on each part, number of correct answers in tests).

In the footer of each unit page a menu is dedicated to the trainer. S/he can access the Trainer's guide (welcome), the tutor's advice page, the learner follow-up page and s/he can also propose tips for this unit.

2.3. Collaborative learning

Citim can be used as a support tool to create and stimulate live discussions between learners and with the trainers. Trainers have space to make notes. In that way they can share use advice and different approaches. They are encouraged to do so.

2.4. Duration

An approximate duration has been estimated by measuring test users in order to propose an indicative time to trainers and learners. This time will be changed (adapted) as more learners are using the tool. This duration is displayed with the learning unit name so that the trainer can take time constraints into account when building a path for a learner. As s/he add more learning units, the total estimated time is calculated.

2.5. Motivational functions

They reside mainly in six directions:

- Being available through Internet, *Citim* uses a media attractive by itself, as it conveys integration values due to its positive social representation.
- *Citim* offers an individual selection of course elements that each learner can study at its own pace.
- *Citim* offers the possibility to repeat steps but also the possibility to repeat the whole process or elements once more in order to improve the assessment given before.
- *Citim* can be used at any time in any place.
- Immigrants can listen to their mother language on the Internet. We have noticed that they use this feature even if their understanding of the text is good. They are happy to hear their language that are minority languages on the web. We know that many people/groups do not access Internet because they do not find content adapted to their need nor content related to their cultural frame. Giving immigrants the possibility to hear, through Internet, their mother tongue is a way to reduce the psychological and cultural distance between them and Internet and, as a consequence, to familiarise with Internet.
- *Citim* offers local information.

3. Elaboration of *Citim*

3.1. A group process

Trainers from various specialities have been involved in the elaboration of *Citim*. Their action was coordinated by a multidisciplinary steering committee: French as a foreign language (FFL) trainer, thematic trainer (business and company environment), training engineer and computer specialist. This group has elaborated a model that has been tested with immigrants before being used to develop the full tool.

Tasks have been divided as follows:

- Choice of topics to be developed (= learning units or modules). Writing of thematic texts and comprehension tests, selection of useful links, complementary information, useful forms to download by the thematic trainer.
- Re-writing of thematic texts and comprehension tests in French more adapted to the target group, writing of dialogues, narrative forms and comprehension tests after the thematic text by FFL trainers.
- Selection of local information (contact, addresses...) by a documentalist.
- Reviewing of all texts by different FFL trainers.
- Recording of dialogues and tests (male and female actors).
- Adaptation of narrative texts in Dialect Arabic, Berber and Turkish by graduate native speakers.
- Recording of these texts.
- Integration of all material by a computer specialist with accessibility concerns.

3.2. Involvement of immigrants

A prototype with a limited number of functions and content has been tested with a restricted number of immigrants. Then a first piloting of the complete version has given the opportunity to make some adaptations related to the ergonomics and accessibility of the whole product. The observation and feedback from learners with no experience of ICT has helped us to detect many small problems that were creating barriers and could be discouraging in a soft use process. Solutions implemented help to provide a more accessible e-learning tool.

3.3. IT for trainer too

Language trainers are usually still not very familiar with the use of IT. The collaboration to the AITO project has given them the opportunity to participate in a language project using IT features. These trainers have discovered from “the inside” the possibilities offered by e-learning. An active involvement (with sharing of responsibilities – everyone participating in accordance to his/her speciality) of trainers in the elaboration of an e-learning tool is the best way to enhance their professional and daily use of these tools for the benefit of learners. The piloting has shown that the use of Internet is not so easy for trainers who had to design (or choose a pre-designed) training path. To some extent it happened to create co-learning between immigrants and trainers: they were both discovering Internet as a training tool and practising together. This observation helps us to redesign the “help” page dedicated to the trainer (the trainer either doesn’t want

too many text, prefers easy navigation...) after the piloting. In addition a live demonstration (animated screenshots) with a voice support was produced as a trainer guide.

4. Technical choices for accessibility

4.1. A web-based tool for low skilled users

Citim has been planned to facilitate its use by trainers and learners without specific skills in ICT but for whom "new technologies" are a significant element of motivation. We preferred to develop a tool comparable to a Web site, as one can meet some elsewhere in work or leisure context, rather than to develop a specific tool. In a first approach, an interface in Flash/Director would have been a more rational technical choice, but the result would have probably isolated the users in an operating mode which is not representative of the current uses of the new tools.

Citim is thus a Web site. It should be displayed by any type of browser as we have respected as much as possible the standards of the WWW Consortium¹. It is a theoretical effort, since up to now the most popular browser (Internet Explorer) don't fully respect the standards. However *Citim* was tested successfully on several browsers and systems (Internet Explorer 5 and 6, Mozilla/Firefox, Konqueror, Opera, Safari, Links and Lynx text browsers, under the systems Windows 98/XP, Linux, MacOS X, FreeBSD). Layout differences are minor. It means that the use of style sheets (CSS) still brings added value.

4.2. Accessibility

When accessing the homepage, *Citim* proposes to start either in full screen, or in the current browser's window. The first option makes it possible to hide the interface of the browser, as it can disturb the users who are not used to Internet. In this case it is not possible to make a mistake on the browser interface itself. The second option makes it possible to use the tool like any Web site, inside the browser.

Citim users can have visual problems on computer, because of a deficiency, the age or a lack of practice. Some screens with high or low definition can also pose problems related to the display size. The use of proportional fonts size (ex or em units in style sheets) makes it possible to adapt the display size without deforming the interface (by using the display menu or with CTRL key + mouse wheel). It is also possible to use a "text-based browser": the contents of the pages remaining linear. For example on the homepage the

menu displayed on the right up side is displayed on the top of the page in a text browser. This makes it possible to the visually impaired people to use a Braille screen, which reads pages from left to the right, from top to bottom.

The mouse can also be a problem with some users. According to the tests which we carried out, the handle of *Citim* is quite fast (20 min. are generally enough to control the movement and the click). We widened the clicking areas after the first series of tests, and the background colour of the links highlights when the mouse goes over. It is possible to use *Citim* with the keyboard (keys 1 to 5), to navigate in the content. Icons shaped like keyboard keys make it look friendly. Javascript must be activated in the browser, which can create accessibility problems or future compatibility problems (e.g. some foreign keyboards need adaptation to work).

Some users have difficulties with screen reading, and quickly turn to paper printing. We have prepared page-setting of the topics with a style sheet dedicated to the printing, in order to produce more easily readable printings (font with serif, removal of menus, of interactive elements, etc.).

To make the tool more universal, a paper version of the contents is available in PDF format. It is produced by an automated extraction of the data, followed by a page-setting in OpenOffice. The result is available as 3 books to download on the site. They make it possible to work on the topics and the exercises without using computers.

4.3. Support

Citim is available on line, but it can be downloaded to run on a non-connected workstation or a local area network, either by installing it on a server supporting PHP, or by launching *Citim* on a Windows 98 or XP workstation. A mini Web server² is launched automatically and opens the browser. The whole can be downloaded as a zip file or as an ISO image, which makes it possible to create a CDROM. The document to produce a printed jacket is provided. The whole tool is about 150 Mo, so it is transportable on a USB key of 256Mo.

Technically, the rebuilding of *Citim* (compression of the sounds, zip and ISO building, etc.) is automated by scripts and tools under Linux. That makes it possible to produce new versions quickly and in a reliable way, in case of tool's modification (evolutions, corrections of bugs).

¹ <http://w3c.org/>

² Thanks to Xavier Garreau and its *ZazouMiniWebServer* <http://www.xgarreau.org/zazouminiwebserver/>

4.4. Sounds

The sounds were recorded and prepared in a studio, in French, Arabic, Berber and Turkish. There are 574 sound sequences. They were converted into MP3 and compressed in two qualities by an automated procedure under Linux (using *Lame*). The sounds can be listened even with a low speed Internet access. They are integrated in *Citim* pages thanks to a small Flash object which reads the files upon request (in streaming, the sound is not downloaded if it is not listened to). It is the most reliable and most practical solution that we found, in spite of the Flash plugins dependence.

Conclusion

Citim fills a gap in the French language learning material offer to facilitate the social and professional integration of immigrants. Simultaneously, Citim allows learners non-familiar with ICT to discover and practice ICT at the same time they “learn” another subject. This cross-learning has been shown as providing more efficacy to both learning processes. To facilitate its dissemination, Citim is distributed under the GPL licence³ for the software and under Creative Commons⁴ for the content, giving the right to use, to copy and to modify whether you share your modifications in same the conditions. Citim methodology can be transferred to elaborate real-life training material for open and distance learning in other contexts, like different language, culture, scope, level...

³ <http://fsffrance.org/>

⁴ <http://creativecommons.org/>