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# Designing CAIT (Computer-Assisted Interpreter Training) Tools: *Black Box*

## Contents



## Abstract

The paper discusses how a CAIT (Computer Assisted Interpreter Training) tool can be used to support the teaching and learning of interpreting, and outlines the main features of one such tool, *Black Box*. The interpreter training curriculum places strong emphasis on students' autonomous practice. Individual practice and group work are as important as class practice, and yet students do not always have access to suitable study support and training materials. After a short Introduction (1), the article begins with an overview of the interpreter training curriculum (2), with the aim of identifying those areas of the latter which could benefit from the support offered by an appropriate software tool. The concept of CAIT (Computer Assisted Interpreter Training) is briefly introduced in (3), in which the development and testing of a pioneering interpreter training prototype (*Interpretations*) is described. The encouraging response obtained during testing and demos has led to the development of a new, fully-fledged CAIT tool, *Black Box*, whose main features are presented and discussed in (4). Section 5 concludes the article by highlighting the main benefits of using such a tool and by outlining future development prospects.

## 1 Introduction

The present paper discusses how a CAIT (Computer Assisted Interpreter Training) tool can be integrated into traditional interpreting classes and outlines the main features of one such tool, *Black Box*. The article starts with an overview of the interpreter training curriculum (2) with the aim of identifying those areas of the latter which could benefit from the support offered by an appropriate software tool. Section 3 briefly introduces the concept of CAIT (Computer Assisted Interpreter Training) and describes the development of a pioneering interpreter training prototype (*Interpretations*). In section 4 the main features of the new, fully-fledged interpreter training tool *Black Box* are presented and thoroughly examined. Section 5 concludes the article by outlining the main benefits of using a CAIT tool and future development prospects.

# 2 The interpreter training curriculum and learner autonomy

## 2.1 Curriculum structure

The first interpreter training courses, established in the Fifties and Sixties, were essentially vocational training courses based on the teachers' professional experience:

> "The people teaching in them [translator and interpreter training institutions] were often professional interpreters and translators; the profession itself had taken to setting its own standards and defining its own objectives" (Caminade & Pym 1998:282).

The creation of AIIC (International Association of Conference Interpreters) in 1953 greatly contributed to the setting of professional standards, including working conditions and professional ethics.

However, as regards the interpreting curriculum and interpreting pedagogy, the situation is less clearly defined. Indeed, conference interpreting is a relatively young academic discipline and although the literature on interpreting pedagogy and interpreter training exercises is now fairly abundant, there are very few published contributions on the overall structure and contents of the interpreter training curriculum. Nevertheless, there is widespread agreement on some basic principles, as shown by the AIIC recommendations on the criteria that must be met by interpreter training courses (Mackintosh 1995, 1999). In short, applicants to conference interpreting courses should have a university degree or equivalent and must pass an entrance exam, aimed at verifying their language skills, their ability to analyze texts, and their general knowledge. Students should be trained in both consecutive and simultaneous interpreting, and the course structure should reflect actual market demands, particularly as regards working language combinations. Professional ethics must be taught and interpreter trainers must be practising interpreters themselves. Finally, external examiners from international or national organizations should be present at the final examining sessions. Mackintosh concludes:

> "Although there are differences in the approach to interpreter training, these seem small enough to justify the claim that there does in fact exist a training paradigm, derived from a widely recognized and practised interpreting paradigm" (Mackintosh 1995:129).

In another review of training programs, Renfer (1992) identifies four models of translator and interpreter training adopted all over the world: the two-tier system, in which interpreter training follows translator training; parallel training, in which students have to choose between translator and interpreter training at the beginning of the course; the Y-model, in which students choose between translator or interpreter training after a common trunk and postgraduate interpreter training.[1]

Whatever the type of training program, there does seem to be significant homogeneity in the curriculum model adopted around the world. However, until the comprehensive review carried out by Sawyer (2004), the only available publications were course profiles or discussions of the merits of specific training activities. To my knowledge, Sawyer is the only researcher to draw from educational theory and curriculum theory to develop a revised

[1] A similar classification is suggested by Mackintosh (1999: 73).

curriculum (for the Graduate School of Translation and Interpretation of the Monterey Institute of International Studies). In his extremely interesting contribution, the author discusses a wide range of issues including admissions, training, final assessment procedures, and so on.

As regards the pedagogy of interpreting, the two leading schools of thought that have produced models of the interpreting process, namely the interpretive theory and the information processing approach, have also developed different pedagogical methods. Here, a very brief overview of the two training models is presented to justify the choices made during the development of *Interpretations*.

## 2.2 The interpretive theory and simultaneous interpreter training

The interpretive theory (or "Paris School"), developed by Seleskovitch and Lederer in the Seventies, postulates that after the interpreter has perceived the first source language (henceforth, SL) segment, the material is de-verbalized, that is, stripped of its linguistic form to retain only the sense, which is then re-formulated in the target language (henceforth, TL).[2] It follows that the main difficulty in interpreting is not finding TL equivalents, but resisting the interference caused by contact between the two languages and the temptation to transcode whole phrases without really understanding them.

In pedagogical terms, Seleskovitch and Lederer claim that the deverbalization process is at the core of any type of interpreting, and that consequently teaching methods are not language-specific. The (more or less marked) syntactic differences between the two languages involved do not fundamentally affect the processes at work in interpreting. Finally, Seleskovitch claims that interpreting should always be taught from the foreign language (B) into the native language (A) because it is only in the mother tongue that students possess the necessary expressive abilities (Seleskovitch 1989:87).

The types of exercises suggested for simultaneous interpreter training are, among others, identifying key words in a text, summarizing a text in the booth, consecutive interpreting, interpreting narrative speeches (visualization techniques), and so on.

The interpretive theory has been very influential for over thirty years now and its training methods have been applied successfully on generations of interpreters. However, while the interpretive theory provides a simple model of text analysis and comprehension, it does not give students any suggestions of how to solve the problem of TL reformulation, as pointed out by Kalina (1994:253):

> The advice frequently given to student interpreters to forget about the words and concentrate on the meaning is well-meant and may, to some extent, do for consecutive, but it definitely does not suffice for simultaneous interpreting. For in simultaneous, it is, among other factors, the incoming words on which the interpreter bases his assumptions, monitors them, decides on his production and checks it all over again.

Furthermore, the interpretive theory denies the existence of any specific language-pair difficulties. However, autonomy from SL structures can only be acquired over a period of time: a language-specific focus in the teaching of SI can facilitate the process. Similarly, although Seleskovitch and Lederer recognize that interference is common in SI,[3] no specific

[2] "A mesure que l'interprète traduit, il oublie les mots qui ont été pronocés et ceux qu'il a dit lui-même, mais il retient les informations qu'il a comprises et réexprimées" (Seleskovitch and Lederer 1986:143).

[3] "La simultanéité des opérations d'audition et d'expression pousse à suivre les modèles phonétiques, morphologiques, sémantiques, syntaxiques de la langue étrangère. Chez l'interprète inexpérimenté, il s'ensuit

exercises or techniques are suggested to tackle this problem. Finally, Seleskovitch and Lederer's rejection of SI into the B language goes against market requirements in many countries: in other words, since many students will have no choice but offer interpreting into B as well as into A, specific training must be made available to them during their course of studies in order to best equip them for the task ahead.

## 2.3 The information processing approach and simultaneous interpreter training

The information processing model of simultaneous interpreting breaks down the interpreting process into a number of subcomponents (Moser 1978). Simultaneous interpreting is seen as a complex activity requiring the concurrent use of several interdependent sub-skills. Therefore, the pedagogical methods developed on this basis aim to develop the skills needed to perform each operation. Training must be gradual

> "… by progressing from easy to more difficult, isolating problems and focusing on variables one at a time and, at a later stage, combining them into progressively more intricate structures" (Kurz 1992:245).

Interpreter training courses that follow this approach begin with a preparatory phase in which a variety of exercises and drills are used to enable trainees to develop the skills needed to interpret. There are several examples of sets of exercises developed on this basis, including Moser's own set (Moser 1978), Lambert's cognitive method (Lambert 1989), Van Dam's strategies for simultaneous interpretation (Van Dam 1989), Kalina's preparatory exercises (Kalina 1992), and many more. Although there are some differences among the various methods, they all include a number of monolingual and bilingual exercises. All the supporters of the information processing approach agree that specific training is needed to cope with simultaneous listening and speaking and to manage the time lag between SL and TL speeches. Moser, Kalina and Lambert include variations of the shadowing task among their preparatory exercises. Likewise, Lambert, Van Dam and Kalina suggest different versions of the cloze drill aimed at developing anticipation skills. Exercises to develop students' linguistic flexibility and to teach repair techniques to be used when working under pressure (such as sight translation, abstracting, and paraphrasing, among others) are included in all the exercise sets.

In short, there is widespread agreement among the supporters of the information processing approach on the usefulness of paraphrasing, clozing, and sight translation, while there is still some controversy over the usefulness of shadowing, which is still one of the main controversial points in interpreting pedagogy (Déjean Le Féal 1997; Kurz 1992; Lambert 1992; and Schweda Nicholson 1990).

## 2.4 Simultaneous interpreting and autonomous learning

To summarize this brief overview of interpreter pedagogy, it could be said that, despite the differences among the many interpreter training institutions, a common feature to all the courses is their intensive nature. They usually involve a high number of contact hours, complemented by an even higher number of self-study hours during which students are expected to practise. A recent example is the *European Masters in Conference Interpreting*

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non seulement des calques occasionnels mais un psittacisme généralisé […]" (Seleskovitch and Lederer 1986:149).

(EMCI), a postgraduate degree offered by a number of European universities that have agreed on a common curriculum. The latter includes five core components (theory of interpretation, practice of interpretation, consecutive interpretation, simultaneous interpretation, the EU and international organizations) and a number of optional modules (EMCI 2005; Mackintosh 1999). Participating institutions have explicitly recognized the important role played by individual study activities within the degree course (EMCI 2005):

> The program will normally offer no fewer than 400 class contact hours, of which a minimum of 75% will be devoted to interpreting practice. In addition, students will be expected to devote time to group practice of simultaneous and consecutive interpreting and other self-directed learning (i.e. background reading; use of information sources e.g. radio, TV, Internet; preparation of glossaries etc). The program is based on the expectation that the number of class contact hours, group work hours and self-directed study may total no less than 1,000 hours.

In other universities outside the EMCI consortium, credits and attendance requirements may vary, but the expectation that trainees will engage in assiduous individual and group practice is always present.[4] It must be noted that in most cases these self-study hours are unstructured and unmonitored, although recordings or handouts for practice sessions are sometimes selected by trainers. Whenever training materials are not made available by teachers, students are expected to find suitable speeches in the faculty video/audio library, on the Internet, radio, TV, and so on. Although students certainly need to develop good information searching skills for their future careers, they may not always the best judges of what is suitable for their particular training stage (Sandrelli 2002a, 2002b, 2003b). Moreover, whilst advanced students may reasonably be expected to work autonomously during their self-study hours, beginners are at risk of picking up incorrect habits which may be difficult to eradicate later on (Déjean Le Féal 1997).

Furthermore, if unsupervised practice sessions are to be useful, students need to be able to assess their own performance and identify their weaknesses. Indeed, the development of self-assessment skills is an essential component of interpreter training. Most interpreting classes include a feedback session, during which trainees' performances are assessed by the trainer and/or peers. Trainees are often asked to carry out a self-evaluation as well. Depending on the course structure and trainer's class plan, the feedback session may include one or more of the following: teacher assessment, peer assessment, co-assessment (teacher and students together), and self-assessment.

Another common component to many interpreter training courses is tutor demonstration (Altman 1989): the trainer's performance is presented as a model of expected quality standards. In other words, students are expected be able to identify the features which make the trainer's performance a high-quality one, and then try and follow his or her example.

Despite the interest in evaluation and quality in professional interpreting, attested by the relatively high number of publications in recent years and the compilation of a specific bibliography on the issue by Shlesinger (2000), very little research has been carried out on evaluation and assessment in training, as pointed out by Mackintosh (1995:126). A number of assessment grids have been developed in interpreter training institutions for use in class (see for example Schjoldager 1996 and Riccardi 2003), and an interesting study on assessment practices was recently carried out by Hartley et al. (2003). Their aim was "…to facilitate learner autonomy in trainee interpreters by providing them with explicit and detailed guidelines for peer- and self-evaluation" (Hartley et al. 2003:2). After an extensive review of

[4] For example, in an outline of the two-year interpreting course offered at ESIT in Paris, Seleskovitch and Lederer (1986:166) specify that for every hour of class attendance, three hours of individual practice are expected if students are to achieve satisfactory results.

the available literature, an assessment grid was compiled for subjects to use in assessing a number of interpreting performances. Trainees, trainers, professional interpreters and users were involved in the study, which revealed that the ability to assess and describe quality interpreting evolves with training. In particular, there is huge variation in students' understanding of some attributes commonly used to evaluate an interpreting performance, including, for example, accuracy and fluency. In other words, to improve their self-assessment skills, students, and particularly trainees, need extensive guidance, preferably through co-assessment exercises carried out in class.

This brief analysis has shown that the structure of most interpreter training courses relies heavily on autonomous learning, which makes interpreter training a prime candidate for the development of dedicated computer software. In this sense, CAIT (Computer Assisted Interpreter Training) tools should be seen as a useful integration to traditional methods, not as a replacement of interpreting classes. However, the implementation of such software tools will require a shift in the educational approach. As this brief description of interpreter training has highlighted, the latter is very trainer-centered. Hartley et al. (2003:2) neatly summarize the situation as follows:

> Currently, many if not most interpreter training programs still apply a trainer-centered approach where expert-trainers, as the source of expertise and authority, play the major role in judging and assessing trainee interpreters' performance. However, the acquisition of interpreting skills by trainees requires not only professional guidance during classes, but also extensive practice outside these hours […]. In reality, therefore, trainee conference interpreters rely heavily on group practice and feedback from peers – targeting both language proficiency and communicative competence – to advance their interpreting skills and performance.

The following section 3 outlines how the *Interpretations* project aimed to address these concerns.

# 3 Developing a CAIT prototype tool: *Interpretations*

## 3.1 Basic overview of the project

*Interpretations* was the practical output of a doctoral research project carried out at the University of Hull (UK) between 1999 and 2002 with financial support from the European Commission under the Marie Curie Training and Mobility of Researchers Program.[5] The software was developed in cooperation with Jim Hawkins, an experienced computer program who had already been commissioned to undertake software development work by the University in connection with other projects. As was mentioned in (2), the basic idea was to investigate how to exploit the potential offered by computer technology to complement teaching methods traditionally used in interpreter training, along the lines of what was being done through Computer Assisted Language Learning (CALL) for foreign language teaching and learning.

The University of Hull was at the time the headquarters of the EUROCALL association and lead site for the TELL Consortium,[6] which had produced the only existing computer

[5] EU contract number ERBFMBICT983512.

[6] The C & IT Centre for Modern Languages (formerly CTI Centre for Modern Languages) of the University of Hull used to host EUROCALL, the European Association for Computer Assisted Language Learning, and the

package for the teaching of liaison interpreting (Italian-English), namely *Interpr-It* (Cervato and de Ferra 1995). The original idea was to produce two CD-ROMs with training materials in Italian and in Spanish aimed at English-speaking trainee interpreters. However, a review of the available CALL literature and a close study of the many CALL packages available in the EUROCALL library soon revealed that the development of an authoring tool would be much more useful, i.e. a multimedia environment in which training materials could be created for any language combination on the basis of the resources available to teachers.

Before *Interpretations* could be developed, however, the interpreter training literature was also studied very carefully in order to identify the most commonly-used exercises and activities in interpreter training which should be supported by the CAIT tool. Since the project was aimed at developing a prototype to verify whether Computer Assisted Interpreter Training was both viable and desirable, it was decided to target a specific user group with specific needs, to facilitate both software development and testing. It was assumed that the potential users of *Interpretations* would be beginners in simultaneous interpreting who had already received training in consecutive interpreting. Therefore, they could be expected to be able to identify key concepts in a text, summarize it, and interpret it consecutively into the target language.

The rationale for this choice was that only those exercises aimed at developing the specific skills required for simultaneous interpreting would be included in the program. However, exercise selection was made difficult by the controversies in simultaneous interpreting pedagogy mentioned in section 2. In the end, the overall prototype design reflected more closely the information processing approach (see 2.3), in that tasks were selected in order to isolate and develop those sub-skills deemed to be necessary in simultaneous interpreting, such as simultaneous listening and speaking, anticipation, linguistic flexibility, and so on. However, it should be stressed that the program does not impose any specific pedagogical methods, in that as an authoring tool, it enables teachers to combine audio, video and textual resources to create exercises tailored to their students' needs. The prototype includes functions to create the following types of exercises: shadowing and clozing, paraphrasing, sight translation and simultaneous interpreting, and simultaneous interpreting with text. However, no rigid modular structure is imposed, so that teachers who do not like paraphrasing exercises, for example, may well choose to create simultaneous interpreting exercises only. A detailed discussion of the merits of the individual tasks, as well as pictures of the user interface, can be found in Sandrelli (2002a, 2002b, 2003a and 2003b). What follows is a brief description of the interface.

## 3.2 *Interpretations* user interface and authoring functions

In *Interpretations*, teaching materials are organized in a tree structure comprising three levels, courses, modules and exercises: for example, Simultaneous Interpreting from English into Italian is a course, Sight translation is a module, and the specific pedagogical material prepared by the teacher for a sight translation is an exercise.

Authoring functions are only accessible to teachers, who can combine video, audio, and text (in digital form) to create exercises. Long video and audio recordings can be broken down into several sections by using a specific editing device to create different exercises, a feature that is particularly useful to adapt authentic conference materials to the students' level of expertise. However, if conference recordings are unavailable or unsuitable, teachers can record a speech easily through the authoring interface. Similarly, if they so wish, teachers can

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TELL Consortium, a major collaboration in software development involving more than 30 universities and more than 30 CALL packages. See www.hull.ac.uk/cti.

provide a recording of their own interpreted rendition, to give students a demonstration (see 2.4), and a written translation of the SL text may also be included.

Since the program is meant to be primarily a practice support tool for the students' self-study hours, teachers can add instructions and information about each speaker and speech. All written texts can be annotated by means of a dedicated word processor called *Sandie*, which makes it possible to create up to five different categories of notes, e.g. grammar, vocabulary, cultural references, terminology, and so on.

The shadowing and clozing exercise combines the repetition of a spoken text in the booth with an oral fill-in-the-gap task. By shadowing (i.e. repeating word for word) the text, students get used to overcoming the physical difficulty of simultaneous listening and speaking; however, in order to fill the gaps, they must also understand the meaning of the speech. This modification of the shadowing task makes it suitable for interpreter training by addressing the often-raised objection that shadowing is harmful, exemplified by Dejéan Le Féal's following comment (1997:617): "… since it is perfectly possible to shadow a speaker without even attempting to understand what he is trying to get at, shadowing may indeed lead students to commit the worst possible methodological error in SI: mindless parroting".

Paraphrasing is another monolingual exercise that was included in the design of *Interpretations* to enhance students' linguistic flexibility, a necessary skill in both their native and foreign languages. Indeed, research has shown that the ability to paraphrase can be considered an indication of aptitude for interpreting, so much so that paraphrasing tasks are being used in aptitude tests for entrance examinations in some institutions (Russo and Pippa 2004).

The sight translation exercise is included in the program both as a preparatory exercise for simultaneous interpreting and as a technique of its own which students must master in order to meet market demands. It is available in two different modes, traditional and timed sight translation, in which the text scrolls up according to a pace established by the teacher, so as to simulate the time pressure under which simultaneous interpreters work.

Finally, simultaneous interpreting exercises, with and without written transcripts of speeches, are included, in order to give teachers the tools to create different kinds of interpreting assignments.

When students log on to the program, *Interpretations* creates a user folder where all of their work can be saved for future reference. When tackling any exercise, students can record themselves and save the recording as an audio file. Students can watch video clips or play audio clips, and display any available written texts at the same time. The program is also equipped with a dedicated device (pitch tracker) which generates a graph representing the variations in the student's voice pitch during the performance. The tool enables students to monitor the prosodic aspects of their performance, including intonation and pauses.

## 3.3 *Interpretations* evaluation

When the program reached a satisfactory development stage, software evaluation sessions were organized in collaboration with the Schools for Interpreters and Translators of the Universities of Trieste and Bologna (Forlì). A full description of testing procedures and results, including the software evaluation questionnaire used, can be found in Sandrelli (2003b). This section presents only a brief overview of the main points which emerged from the evaluation.

Overall, 37 students took part in the evaluation. After each session, students were asked to fill in a questionnaire, and were given a five-minute interview on various aspects of interface design, ease of use, available tools, etc. Students indicated the following features as the key assets of *Interpretations*: gradual introduction to simultaneous interpreting through

preparatory exercises, autonomous learning, individual feedback, and simulation of professional working conditions. Most students declared that the availability of video, audio and text helped them concentrate on content and aided comprehension. Students also highlighted that working with the software is less time-consuming than traditional work in the booth, since all the necessary materials and tools are organized and ready to be used in a dedicated environment.

The students of both universities also gave suggestions for improvement. Most comments centered on the need to increase the degree of interactivity between users and software and the quantity of information available to users. The latter aspect is worth highlighting: when creating exercises for the self-study hours, interpreting teachers need to bear in mind that students need access to more information than is generally considered necessary, precisely because the teacher is not there to help and answer questions. For example, students suggested that teachers should include a teacher's demonstration in all the exercises; a teaching guide in the Help menu explaining in detail the aims of each activity; background information about topics and speakers; and text analysis exercises centered on the speeches, for students to do at home and then submit to the teacher for feedback.

In 2001 and 2002 *Interpretations* was demonstrated in several interpreter training institutions, including Lessius Hogeschool (Antwerp), the universities of Leeds, Sussex, Westminster, Granada, Prague, Copenhagen, Aarhus and Paris. Other useful indications emerged regarding a number of desirable additional features, including functions for creating consecutive and liaison interpreting exercises; communication tools for sending and sharing files and obtaining feedback; a dedicated text editor for glossary work and other written work; video subtitling functions, both as an additional training aid and to develop specific professional skills.

The positive response obtained during testing and in conferences and workshops convinced us that CAIT is indeed both viable and necessary. Therefore, we decided to continue working in this direction. Section 4 describes the main feature of a new, fully-fledged CAIT tool which has been developed in collaboration with Melissi Multimedia Ltd. and is now available on the market.

# 4 From *Interpretations* to *Black Box*

## 4.1 The Melissi Digital Classroom[7]

In 2002 Melissi Multimedia Ltd (U.K.) was set up to design and manufacture a revolutionary new digital language laboratory for the University of Hull, the *Melissi Digital Classroom*. It was decided that, as well as many functions for creating and distributing language-learning exercises, it would include a dedicated interpreter training module, called *Black Box*.

The digital classroom runs on a local area network (LAN), which means that the language teacher's computer is connected to the students' computers. This makes it possible to create and distribute language-learning materials to students (the whole class or groups of students) very fast across the local network. The authoring system enables teachers to record satellite TV and radio broadcasts and digitize VHS and audio tapes very easily, to produce exercises rapidly and efficiently. As well as traditional language learning activities (involving any combination of audio, video and text), teachers can use an integrated subtitling package and the interpreter training module *Black Box*.

[7] Web address: www.melissi.co.uk

Through the interface teachers have control over the work done by all the students who are logged on to the system. The list of logged-on users appears on the left hand-side of the screen and the teacher can select all of them, groups of them, or individual users to send them materials to work on. The teacher can listen in to what students are doing at all times thanks to the voice-message system, symbolized by the mobile phone icon; he or she can also give individual, personalized feedback without stopping the rest of the class via the same system. There is also a text-based message system ("chat"), which enables teachers and students to communicate in writing in real time.

The system also features an integrated word processor, a Web browser, a file compression and storage system, and the *Melissi Wave Viewer,* which is an advanced version of the Pitch Tracker tool available in *Interpretations* (see §3.2).

The digital classroom is proving very popular with universities in the UK, where it was developed.[8] Given the amount of interest that was expressed for *Interpretations* and for the *Black Box* module by language departments and interpreter training departments, Melissi Multimedia Ltd. decided to develop *Black Box* as a stand-alone program as well. *Black Box* was released in March 2005 and includes dedicated authoring functions to create simultaneous, consecutive and liaison interpreting exercises, as well as sight translation exercises, and several new and improved user functions.

## 4.2 *Black Box* authoring functions

The *Black Box* authoring system includes all the features of *Interpretations* in a more streamlined form, as well as a more sophisticated text editor for annotating texts, and a wide range of additional tools which will be briefly described in the present section.

In *Black Box* teaching materials are organized on two levels, Modules and Exercises (the Course level that existed in *Interpretations* was deemed redundant and was therefore dropped). Teachers prepare teaching materials through the *Exercise Wizard*, that can be seen in Fig. 1.

After selecting the "new exercise" option, teachers are asked to choose from among three pre-defined exercise types, i.e. simultaneous interpreting with audio or video, timed text

[8] A list of selected current customers includes the universities of Hull (2 classrooms), Portsmouth (4 classrooms), Southampton, Middlesex, and Bath, as well as higher education colleges, including Regent's College, Landau Forte College, Prior Pursglove 6th Form College and Stockton 6th Form College, and some UK government departments.

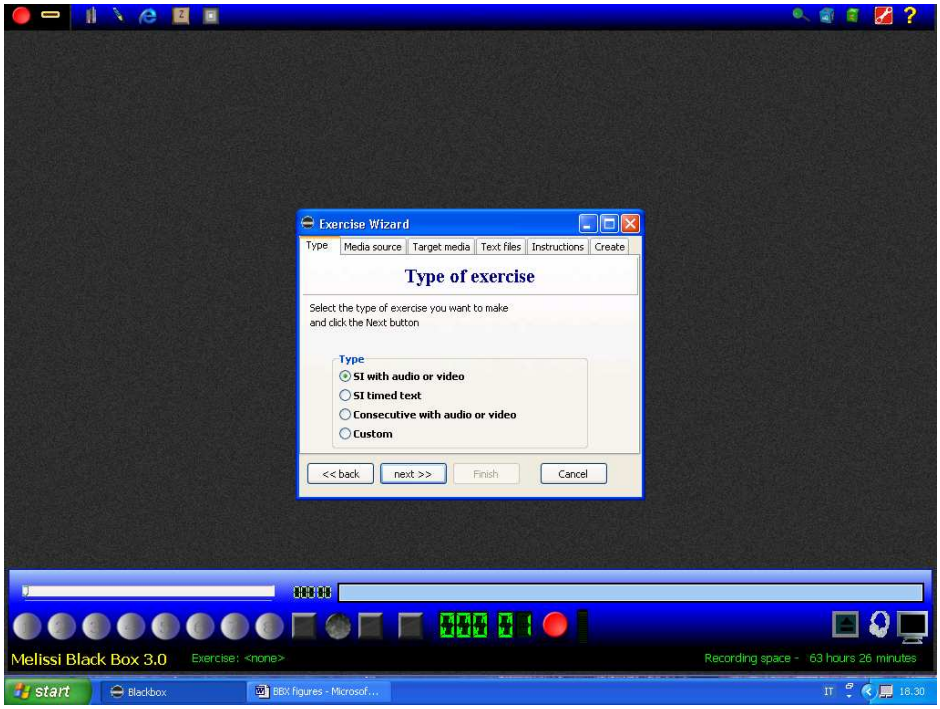


*Fig. 1: Exercise Wizard*

(sight translation), and consecutive/liaison interpreting. There is also a "custom" option to enable teachers to create other types of activities. If, on the other hand, teachers want to replicate the structure of a particular exercise to create a series of similar activities, they can select the "existing exercise layout file" option to speed up the process.

After choosing the exercise type, the program requires teachers to indicate the resources they want to include in each exercise, that is, media files (audio and/or video clips) and written materials. Clearly, in a simultaneous interpreting exercise the only essential elements are a video or audio clip and a transcript of the speech. However, the *Wizard* makes it possible to add many more resources, including instructions to students, a written translation of the speech, written exercises (e.g. comprehension questions, text analysis exercises, language enhancement activities, etc.), a teacher's interpreted version of the speech (an audio recording), and so on.[9]

Moreover, teachers can select specific fragments from a source clip by applying the dedicated entry points ("set mark in" and "set mark out" buttons). This is a useful function to break up a long speech into several clips, without having to physically edit the recording with an audio/video editing software program: when the system reads the entry points, it loads only the specified part of the video or audio clip in the exercise. Teachers can also manipulate the sound stream by adding an echo effect and/or a sound distortion, in order to simulate realistic working conditions, which, as is well-known, are not always perfect.[10]

[9] The presence of additional resources (written texts or recordings) is indicated by special icons which appear in the top part of the screen.

[10] Reference is here made to consecutive and liaison interpreting in particular, as these two techniques are often used in noisy environments. However, poor-quality equipment may be found in simultaneous interpreting as well, particularly when working as a freelance on national interpreting markets. Therefore, interpreter training should reflect these less-than-ideal working conditions as well to prepare students to work under difficult conditions.

Even the "basic" form of a simultaneous interpreting exercise can be enriched by annotating the source text transcript by means of a dedicated text editor, which is a more sophisticated version of *Sandie*, the editor available in *Interpretations* (see 3.2). The *Black Box* Text Editor has all the standard features of word processor and a few special functions (see Fig. 2).

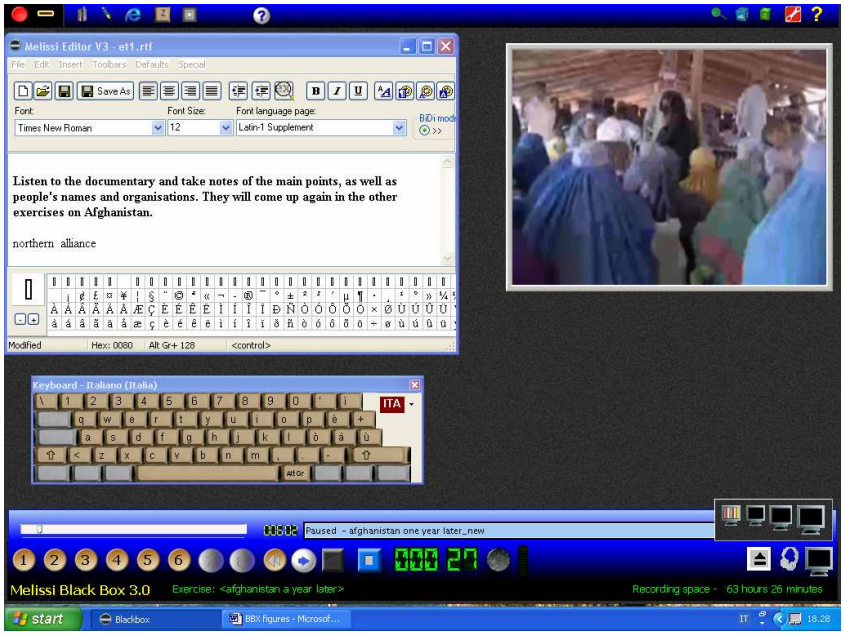


*Fig. 2: Black Box Editor and on-screen keyboard*

The *Black Box* Editor makes it possible to create Smart Text, by selecting a word or a phrase and inserting a "hot footnote" by clicking on a dedicated button. When students read the text, they will be able to see the note made by the teacher simply by moving the mouse pointer over the "hot" word. Six categories of notes are available, and the labels for these categories are chosen by teachers: for example, grammar, cultural reference, technical terms, and so on. Web links can also be inserted into the text, and can be clicked on to launch Internet Explorer directly. The different categories of notes are displayed in different colors and can be switched on and off by students when they are reading the text.

The Editor is also used by students to carry out written work. When teachers associate a language-enhancement exercise to an interpreting exercise, the written task is automatically loaded in the Editor. When students click on the Editor icon, the written exercise is opened automatically by the program. For languages with special characters, as well as the character map to be found in the Editor, *Black Box* features an on-screen keyboard which can be displayed, moved and re-sized (see Fig. 2).

The Editor can also be used to make bitmaps for timed sight translation exercises (created by using the *Exercise Wizard*, like all other exercises). A Rich Text Format file is loaded in the Editor and the background texture is chosen for the bitmap from among a number of choices. Then, teachers open the *Exercise Wizard*, select the bitmap as the source file for a scrolling text exercise and specify the time in which students will have to translate the text on-sight, as well as the amount of context (i.e. lines of text) that will be displayed. Text is presented to students in a scrolling cylinder which advances at the pace established by

the teacher (see Fig. 3). The text can be made to scroll upwards or downwards (for sight translation exercises which start from the end of the text).

All the files making up an exercise are bound in one individual file with a ".bbx2" extension, which means that it is impossible for the teacher to forget important materials (i.e.


*Fig. 3: A sight translation exercise: scrolling text*

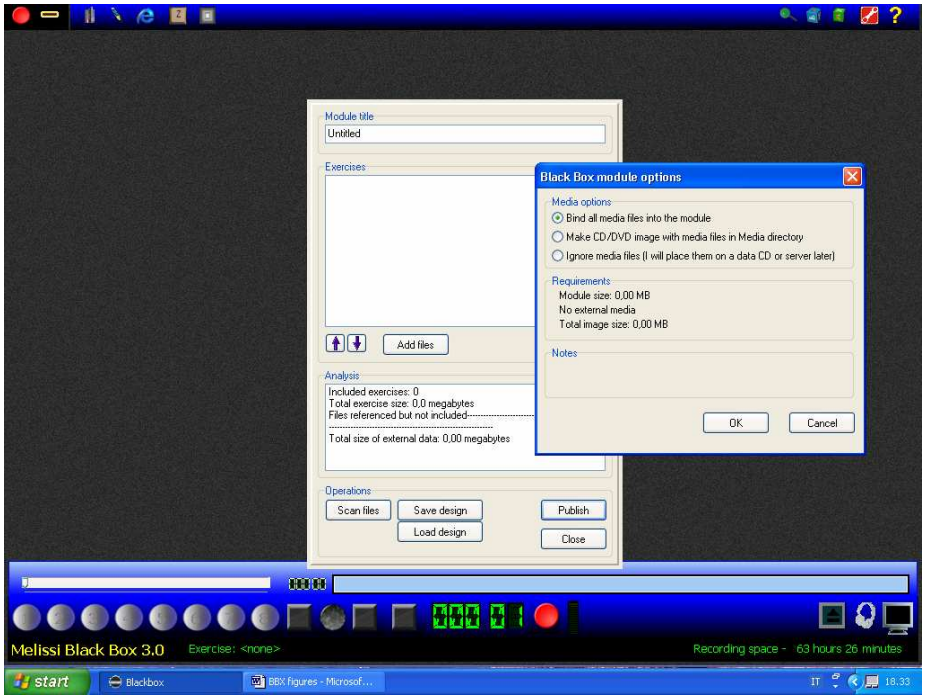


*Fig. 4: Module maker*

a video clip or a fill-in-the-gaps exercise) at home. Moreover, when a number of exercises have been created, they can be bound into one module, thanks to the Module maker (Fig. 4).

Exercises are selected and added to the module list in which they will appear in the order students should tackle them. The order can be modified before the module is published by using the dedicated arrows, and module design can be saved for future use. When the module is ready, it can be published in three different ways, depending on storage space available and intended use of the materials: all the media files can be included in the module; a CD or DVD image can be produced with all the media files stored in the *Black Box*' media directory; or the media files can be left out altogether. Thus, if *Black Box* is installed on a LAN, teaching materials can be stored in a dedicated directory where students will find it; or, if it is more convenient, they can be distributed to students on CD-Rom or DVD.

## 4.3 *Black Box* student user features

After describing the authoring functions available in *Black Box*, let us have a look at the user interface. Firstly, it must be noted that the system is fully icon-based, which makes it easy and intuitive to use and, incidentally, easy to localize as well (see Fig. 5).[11]

The interface is clutter-free, with all the icons arranged along the top and bottom of the screen. In the top left hand-side corner there are five icons. The books icon is the Open files option, enabling students to browse at available exercises, modules, projects, recordings and media. Student recordings can be compressed extremely quickly for storage on pen-drives or floppies.[12]

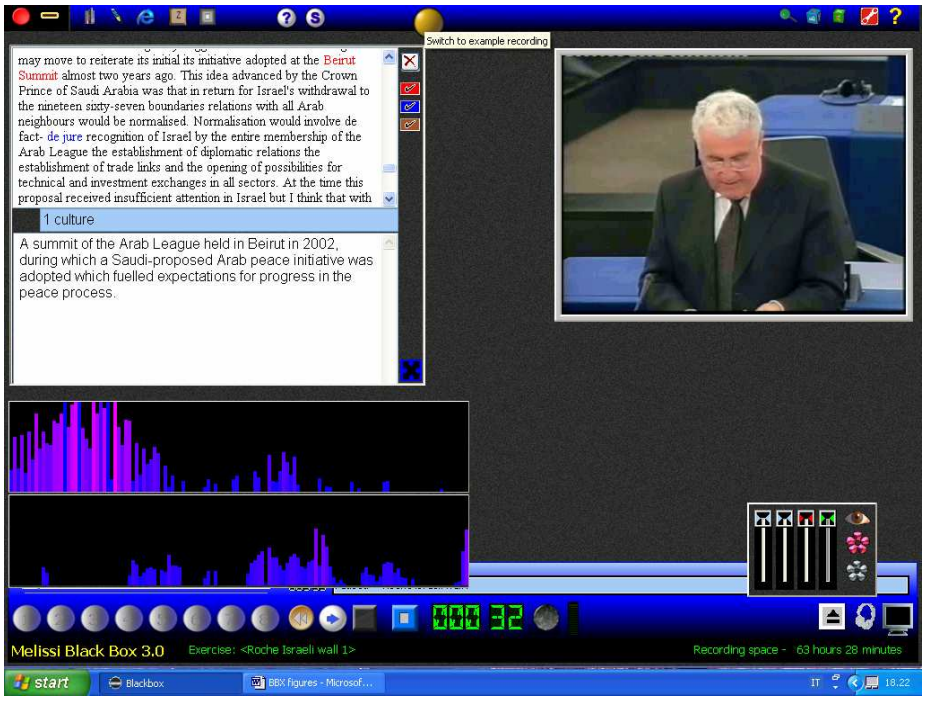


*Fig. 5: User interface: a simultaneous interpreting exercise, with annotated SL transcript, video clip window, SL speaker's and student's waveforms (top and bottom halves of the Melissi Wave Viewer, respectively).*

[11] Indeed, there are plans produce localized versions in a number of languages, since the only materials that need to be translated are the help guides and the various icons and buttons.

[12] *Black Box* uses the Ogg Vorbis "open source" technology, which makes files approximately 10 times smaller.

The pencil icon is *Black Box* Editor, which, as was extensively explained in (4.2), can be used to carry out written work, from language exercises to glossary preparation. Next to it are the web browser icon, the on-screen keyboard icon (see 4.2) and the module contents icon, which displays all the exercises available in a module.

The top right hand-side corner features another five icons. The green ball is the icon indicating *Black Box*'s additional plug-ins, that is, some extra functions that can be added to customize the program.[13] The two cubes to its right are the *Exercise Wizard* and the Module maker (see 4.2). The spanner icon is the audio mixer to alter default audio settings, whereas the question mark activates the help file, which includes a general *Black Box* guide (aimed primarily at students) and an authoring guide for teachers.

Along the bottom of the screen there are some "portable stereo" controls (play, pause, rewind, record), a bookmarking tool, audio controls (headset icon) and video controls (computer monitor icon), as well as a tool to exit the exercise and module.

The stereo controls are self-explanatory, but a short description of how to use the "record" button when performing a consecutive or liaison interpreting exercise is needed. *Black Box* simulates consecutive and liaison interpreting by allowing students to alternate between the SL speech and their own rendition and storing both tracks in a single file. This means that a student listens to the SL speech, then records his or her interpretation, then listens to the following SL fragment, and so on. At the end of the dialogue, the whole recording can be played back and the student will hear the SL speaker's voice alternating with his or her own.

The bookmarking feature enables students to insert eight bookmarks in any given video or audio file whilst playing it, for example when they hear an unknown word or expression. At the end of the exercise, students can go back to those specific items simply by clicking on the relevant bookmark.

The video controls make it possible to gradually re-scale the video window, from miniature size to full screen. The audio controls, on the other hand, feature two volume boost buttons which increase the volume of the SL and TL speeches respectively. Students can also slow down the SL speech whilst they are playing it (but not whilst recording), without significantly altering the speaker's voice pitch. This tool is particularly useful to beginners when SL speakers have a strong accent (regional or foreign), or when students' SL comprehension is still imperfect.

Moreover, there are separate SL speaker's and interpreter's volume control bars as well, which means that after an exercise trainees can play back their own rendition with the SL speech in the background (for example, to monitor their time lag, or *décalage*) or, alternatively, with the original speech track off, to better focus their attention on their own delivery and presentation.

If students want to monitor the prosodic aspects of their performance, *Black Box* offers them another tool, the *Wave Viewer*, which visualizes frequency variations in the SL speaker's pitch as well as in the interpreter's rendition (see Fig. 5). The tool shows students the general prosodic patterns of their performance, including a visual representation of their pauses (blank parts in the graph). Under the teacher's guidance, the *Wave Viewer* can be used to increase students' awareness of the importance of prosodic aspects and to pinpoint specific problems in their delivery.

This brief overview of the main features of *Black Box* has highlighted the great teaching and learning potential of the program. However, successful implementation depends on the choices made by individual institutions and teachers, especially as regards the educational

[13] For example, there is a swap mouse button plug-in for left-handers.

approach used (see 2.4). The following, final section (5) presents some conclusions and ideas for future developments.

# 5 Conclusions: best practice and future developments

*Black Box* has been developed as a CAIT tool to support the teaching and learning of interpreting, that is, to complement existing teaching methods in interpreter training. The interpreter training curriculum, if, as was discussed in (2.1), a single curriculum does indeed exist, places strong emphasis on students' autonomous practice. No trainee can attain the required standards just by attending classes. Individual and group work are an important part of any interpreter training course, and yet students do not always have access to suitable study support and appropriate practice materials. Moreover, section 2.4 has highlighted that self-assessment skills and the ability to assess other interpreters' performances are essential for trainees, both to ensure progress and to maintain quality standards in their future careers as professional interpreters. And yet, as was shown by Hartley et al. (2003), assessment criteria are often too vague and unclear to students.

*Black Box* is an attempt to respond to these challenges. By providing teachers with a user-friendly, flexible tool, it is hoped that they will exploit to the full the opportunities offered by today's mass media and technology to take the (comparatively little) time to create materials for students' self-study hours. Creating interpreter training exercises in the program is no more time-consuming than preparing class materials in the traditional way, i.e. finding suitable audio or video tape recordings or a speech transcript, and then highlighting the possible sources of difficulties for students, including cultural references, specific syntactic structures, language-pair related aspects, etc. Moreover, materials produced with *Black Box* by different universities could be exchanged to save time and expand the range of available speeches (topics, accents, speaking styles, etc.). Finally, *Black Box* makes it possible to establish a strong connection between class activities and self-study hours: for example, teachers can use the first part of a recording in class and then make the rest available to trainees through the program. Thus, teachers can feel confident that the self-study hours actively work as reinforcement activities and contribute to consolidating the techniques and principles presented in class.

As regards the students, the program enables them to save time and practise in a more structured and effective way, by giving them the tools to work in a dedicated environment. Moreover, one of the main benefits that *Black Box* can provide is self-pacing: students can take their time to study the teacher's notes, the style of the SL speech, the SL speaker's accent, etc. They can play the SL clip more than once, depending on their comprehension skills. They can repeat the same exercise several times, depending on the level of expertise they have achieved. In other words, they can obtain the individual focus that is not always possible in a class situation.

Moreover, working with the program does not necessarily mean working alone. Students can work in pairs or small groups on the same materials and swap their recordings to give each other feedback. Thanks to the file compression option, they can also take home their recordings over a period of time and store them to monitor their progress, or they can give them to their teachers to obtain feedback.

An important aspect of the program is all the post-task activities designed to make students aware of their strong and weak points. Clearly, students need to be taught how to carry out the self-assessment activities made possible by *Black Box*, including, for example, comparing one's recording with the SL speech transcript, identifying omissions, comprehension errors, TL production errors, correctly interpreting the *Wave Viewer* graph, and so on. Similarly, they need to be shown how to identify the differences between their own

rendition and the teacher's version, if it is available. In other words, students need to be taught in class how to assess their own performances in order to be able to do it properly when they are alone. In this regard, the development of an assessment grid such as the ones mentioned in (2.4) (Schjoldager 1996; Riccardi 2003) and its inclusion in the exercises provided can give students reliable indications, especially if it is illustrated and discussed in class in co-assessment activities led by trainers. In this respect, the use of *Black Box* could also open up interesting research prospects on assessment, particularly on the differences between teacher assessment and students' self-assessment, by making it possible to collect large quantities of data (completed assessment grids and recordings of interpreted performances) already in digital form and available in a compact electronic environment.[14]

As regards future developments of *Black Box* and CAIT in general, in the present globalized economy it seems likely that in the near future there will be increased pressure to reduce the duration of interpreter training courses and increase the range of an interpreter's working languages in order to meet market demands. This is particularly true in Europe, with the drive towards stronger European integration and the European Union enlargement process. The integrated use of CAIT software could contribute significantly to training without in any way reducing required standards. For example, it is easy to envisage new and improved ways of using *Black Box* in a LAN environment, in which the degree of interactivity among participants (and therefore available feedback) could be increased through the implementation of an internal e-mail system, a chat function, a class forum, a bulletin board, and so on, along the lines of what is already possible in the *Melissi Digital Classroom* (see 4.1). We are also looking into the possibility of adding a speech recognition element to the program, primarily to help students transcribe and analyze their own performances more easily. Moreover, new functions can be planned to make practice sessions with *Black Box* even more similar to actual interpreting assignments: for example, the interface layout could be changed to resemble more closely an interpreting booth with all its switches and buttons. If the program were installed on a LAN, the new "realistic" interface would also make it possible to organize special practice sessions on relay interpreting, in order to train students to use the relevant switches.

The above are just examples of simple additions that could be made to *Black Box* to further increase its teaching and learning potential. However, the real challenge that lies ahead is certainly the development of a Web-based virtual learning environment (VLE) for interpreter training. Distance learning of interpreting is not impossible: indeed, there is already an example of distance courses in court and health care interpreting offered by the *Vancouver Community College* in Canada. However, these courses only make use of the Internet and e-mail as communication tools, whereas teaching materials are distributed on VHS and CD-Rom. Delivering courses via the Web presents a number of technical and pedagogical problems, but it is certainly not as far ahead as one might think. For a start, it is already possible to envisage the use of a server from which students could download exercises onto their machines to use them off-line (thus avoiding altogether any technical problems). However, it must be noted that such developments can only be envisaged with the cooperation of a number of different institutions, including universities and educational software development companies. It is hoped that this paper may contribute to sparking off a debate on these important challenges that will affect the education and training of future generations of interpreters.

[14] In this regard, it should be noted that Lessius Hogeschool (Antwerp), the first Melissi customer to equip its interpreting lab with *Black Box*, has recently set up a two-year research position in *Interpreting* which includes, among other tasks, assisting in a peer and self-assessment project based on *Black Box* (see: www.lessius-ho.be).

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## Web links

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